SRX210 Services Gateway

Hardware Guide

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SRX210 Services Gateway Hardware Guide

The information in this document is current as of the date listed in the revision history.

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About This Guide

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- Obtaining Documentation on page xviii
- Documentation Feedback on page xviii
- Requesting Technical Support on page xviii

Objectives

This guide describes hardware components and installation, basic configuration, and basic troubleshooting procedures for the Juniper Networks SRX210 Services Gateway. It explains how to prepare your site for services gateway installation, unpack and install the hardware, power on the services gateway, perform initial software configuration, and perform routine maintenance. After completing the installation and basic configuration procedures covered in this guide, see the JUNOS software configuration guides for information about further JUNOS software configuration.

Audience

This guide is designed for network administrators who are installing and maintaining a Juniper Networks SRX210 Services Gateway or preparing a site for device installation. To use this guide, you need a broad understanding of networks in general and the Internet in particular, networking principles, and network configuration. Any detailed discussion of these concepts is beyond the scope of this guide.

Documentation Conventions

Table 1 on page xvi defines the notice icons used in this guide.

Table 1: Notice Icons

Icon	Meaning	Description
	Informational note	Indicates important features or instructions.
	Caution	Indicates a situation that might result in loss of data or hardware damage.
	Warning	Alerts you to the risk of personal injury or death.
	Laser warning	Alerts you to the risk of personal injury from a laser.

Table 2 on page xvi defines the text and syntax conventions used in this guide.

Table 2: Text and Syntax Conventions

Convention	Description	Examples
Bold text like this	Represents text that you type.	To enter configuration mode, type the **configure** command: user@host> **configure**
Fixed-width text like this	Represents output that appears on the terminal screen.	user@host> **show chassis alarms** No alarms currently active
Italic text like this	■ Introduces important new terms. ■ Identifies book names. ■ Identifies RFC and Internet draft titles.	■ A policy *term* is a named structure that defines match conditions and actions. ■ *Junos System Basics Configuration Guide* ■ RFC 1997, *BGP Communities Attribute*
Italic text like this	Represents variables (options for which you substitute a value) in commands or configuration statements.	Configure the machine's domain name: [edit] root@# **set system domain-name** *domain-name*

Table 2: Text and Syntax Conventions *(continued)*

Convention	Description	Examples
Plain text like this	Represents names of configuration statements, commands, files, and directories; IP addresses; configuration hierarchy levels; or labels on routing platform components.	■ To configure a stub area, include the stub statement at the [edit protocols ospf area area-id] hierarchy level. ■ The console port is labeled CONSOLE.
< > (angle brackets)	Enclose optional keywords or variables.	stub <default-metric *metric*>;
| (pipe symbol)	Indicates a choice between the mutually exclusive keywords or variables on either side of the symbol. The set of choices is often enclosed in parentheses for clarity.	broadcast | multicast (*string1* | *string2* | *string3*)
# (pound sign)	Indicates a comment specified on the same line as the configuration statement to which it applies.	rsvp { # Required for dynamic MPLS only
[ ] (square brackets)	Enclose a variable for which you can substitute one or more values.	community name members [*community-id*s]

Indention and braces ({ })	Identify a level in the configuration hierarchy.	[edit]
		routing-options {
		    static {
		        route default {
		            nexthop *address*;
		            retain;
		        }
		    }
		}

; (semicolon)	Identifies a leaf statement at a configuration hierarchy level.	
J-Web GUI Conventions		
Bold text like this	Represents J-Web graphical user interface (GUI) items you click or select.	■ In the Logical Interfaces box, select **All Interfaces**. ■ To cancel the configuration, click **Cancel**.
> (bold right angle bracket)	Separates levels in a hierarchy of J-Web selections.	In the configuration editor hierarchy, select **Protocols > Ospf**.

SRX Series Documentation and Release Notes

For a list of related SRX Series documentation, see http://www.juniper.net/techpubs/hardware/srx-series-main.html.

If the information in the latest *SRX Series Release Notes* differs from the information in the documentation, follow the *SRX Series Release Notes*.

Obtaining Documentation

To obtain the most current version of all Juniper Networks technical documentation, see the products documentation page on the Juniper Networks web site at http://www.juniper.net/techpubs.

To order printed copies of this guide and other Juniper Networks technical documents, or to order a documentation CD, which contains this guide, contact your sales representative.

Copies of the Management Information Bases (MIBs) available in a software release are included on the documentation CDs and at http://www.juniper.net/.

Documentation Feedback

We encourage you to provide feedback, comments, and suggestions so that we can improve the documentation. You can send your comments to techpubs-comments@juniper.net, or fill out the documentation feedback form at http://www.juniper.net/techpubs/docbug/docbugreport.html. If you are using e-mail, be sure to include the following information with your comments:

- Document name

- Document part number

- Page number

- Software release version (not required for *Network Operations Guides [NOGs]*)

Requesting Technical Support

Technical product support is available through the Juniper Networks Technical Assistance Center (JTAC). If you are a customer with an active J-Care or JNASC support contract, or are covered under warranty, and need postsales technical support, you can access our tools and resources online or open a case with JTAC.

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- Product warranties- For product warranty information, visit http://www.juniper.net/support/warranty/.

- JTAC Hours of Operation- The JTAC centers have resources available 24 hours a day, 7 days a week, 365 days a year.

Self-Help Online Tools and Resources

For quick and easy problem resolution, Juniper Networks has designed an online self-service portal called the Customer Support Center (CSC) that provides you with the following features:

- Find CSC offerings: http://www.juniper.net/customers/support/

- Search for known bugs: http://www2.juniper.net/kb/

- Find product documentation: http://www.juniper.net/techpubs/

- Find solutions and answer questions using our Knowledge Base:
  http://kb.juniper.net/

- Download the latest versions of software and review release notes:
  http://www.juniper.net/customers/csc/software/

- Search technical bulletins for relevant hardware and software notifications:
  https://www.juniper.net/alerts/

- Join and participate in the Juniper Networks Community Forum:
  http://www.juniper.net/company/communities/

- Open a case online in the CSC Case Manager: http://www.juniper.net/cm/

To verify service entitlement by product serial number, use our Serial Number Entitlement (SNE) tool located at https://tools.juniper.net/SerialNumberEntitlementSearch/.

Opening a Case with JTAC

You can open a case with JTAC on the Web or by telephone.

- Use the Case Manager tool in the CSC at http://www.juniper.net/cm/.

- Call 1-888-314-JTAC (1-888-314-5822 toll-free in the USA, Canada, and Mexico).

For international or direct-dial options in countries without toll-free numbers, visit us at http://www.juniper.net/support/requesting-support.html.

Part 1

SRX210 Services Gateway Overview

Chapter 1

Introduction to the SRX210 Services Gateway

This chapter includes the following topics:

- SRX210 Services Gateway Description on page 3
- SRX210 Services Gateway Hardware Features on page 4

SRX210 Services Gateway Description

This topic includes the following sections:

- About the SRX210 Services Gateway on page 3
- SRX210 Services Gateway Models on page 3
- Accessing the SRX210 Services Gateway on page 4

About the SRX210 Services Gateway

The Juniper Networks SRX210 Services Gateway offers complete functionality and flexibility for delivering secure, reliable data and voice services over IP, along with multiple interfaces that support WAN and LAN connectivity. Features include SIP/analog voice support, flexible data/voice T1/E1, and Power over Ethernet (PoE).

The SRX210 Services Gateway provides Internet Protocol Security (IPsec), virtual private network (VPN), and firewall services for small-sized and medium-sized companies and enterprise branch and remote offices. Additional security features also include Unified Threat Management (UTM), which consists of IPS antispam, antivirus, and Web filtering.

The SRX210 Services Gateway runs the JUNOS operating system.

SRX210 Services Gateway Models

The SRX210 Services Gateway is available in four models, which are listed in Table 3 on page 4.

Table 3: SRX210 Services Gateway Models

Product Name	Device Type	Model Number
SRX210 Services Gateway	Low Memory	SRX210B
SRX210 Services Gateway	High Memory	SRX210H
SRX210 Services Gateway with PoE	Power over Ethernet (PoE)	SRX210H-POE
SRX210 Services Gateway with integrated convergence services	Voice	SRX210H-P-MGW

All SRX210 Services Gateways run the JUNOS operating system.

Accessing the SRX210 Services Gateway

Two user interfaces are available for monitoring, configuring, troubleshooting, and managing the SRX210 Services Gateway:

- J-Web interface: Web-based graphical interface that allows you to operate a services gateway without commands. The J-Web interface provides access to all JUNOS functionality and features.

- JUNOS command-line interface (CLI): Juniper Networks command shell that runs on top of a UNIX-based operating system kernel. The CLI is a straightforward command interface. On a single line, you type commands that are executed when you press the Enter key. The CLI provides command Help and command completion.

Related Topics
- SRX210 Services Gateway Specifications on page 7
- SRX210 Services Gateway Hardware Features on page 4

SRX210 Services Gateway Hardware Features

Table 4 on page 4 lists the hardware features supported on the SRX210 Services Gateway.

Table 4: SRX210 Services Gateway Hardware Features

Feature	SRX210 Services Gateway Low Memory	SRX210 Services Gateway High Memory	SRX210 Services Gateway Power over Ethernet	SRX210 Services Gateway with Integrated Convergence Services
DDR memory	512 MB	1 GB	1 GB	1 GB

Table 4: SRX210 Services Gateway Hardware Features *(continued)*

Feature	SRX210 Services Gateway Low Memory	SRX210 Services Gateway High Memory	SRX210 Services Gateway Power over Ethernet	SRX210 Services Gateway with Integrated Convergence Services
SIP/analog voice support	No	No	No	Yes
PoE support	No	No	Yes	Yes
Power supply adapter	60 watts	60 watts	150 watts	150 watts
AC input voltage	100 to 240 VAC	100 to 240 VAC	100 to 240 VAC	100 to 240 VAC
Gigabit Ethernet ports	2	2	2	2
Fast Ethernet ports	6	6	6	6
Console port	1	1	1	1
USB ports	2	2	2	2
Foreign Exchange Subscriber (FXS) and Foreign Exchange Office (FXO) interface	None	None	None	Two FXS ports and two FXO ports
Mini-PIM slots	1	1	1	1
LEDs	Status, Alarm, HA, Power, Mini-PIMs, 3G ExpressCard, Port (TX/RX and PoE)	Status, Alarm, HA, Power, Mini-PIMs, 3G ExpressCard, Port (TX/RX and PoE)	Status, Alarm, HA, Power, Mini-PIMs, 3G ExpressCard, Port (TX/RX and PoE)	Status, Alarm, HA, Power, Mini-PIMs, 3G ExpressCard, Port (TX/RX and PoE), and Voice Interface
NAND flash	1 GB	1 GB	1 GB	2 GB
Fans	1	1	1	2

NOTE: The PoE LED is enabled only on the PoE model of the SRX210 Services Gateway. For non-PoE services gateways, the PoE LED remains off.

For more details on the SRX210 Services Gateway software features and licenses, see the *JUNOS Software Administration Guide*.

Chapter 2

SRX210 Services Gateway Hardware Components and Specifications

This chapter includes the following topics:

- SRX210 Services Gateway Specifications on page 7
- SRX210 Services Gateway Front Panel and Back Panel Views (Low Memory, High Memory and PoE Version) on page 10
- SRX210 Services Gateway with Integrated Convergence Services Front Panel and Back Panel Views on page 12
- SRX210 Services Gateway Built-In Interfaces on page 14
- SRX210 Services Gateway LEDs on page 18
- SRX210 Services Gateway Boot Devices and Dual-Root Partitioning Scheme on page 23
- SRX210 Services Gateway Cooling System on page 24
- SRX210 Services Gateway Power Supply on page 26

SRX210 Services Gateway Specifications

The SRX210 Services Gateway chassis is a rigid sheet metal structure of 1 rack Unit (U) height that houses all the other hardware components.

Figure 1 on page 8 shows the SRX210 Services Gateway with Integrated Convergence Services chassis.

Figure 1: SRX210 Services Gateway with Integrated Convergence Services
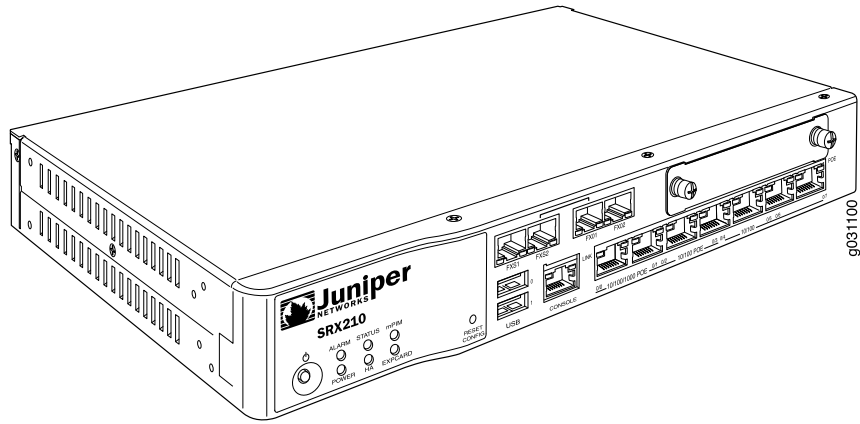
Figure 2 on page 8 shows the SRX210 Services Gateway chassis (for low memory, high memory, and PoE models).

Figure 2: SRX210 Services Gateway
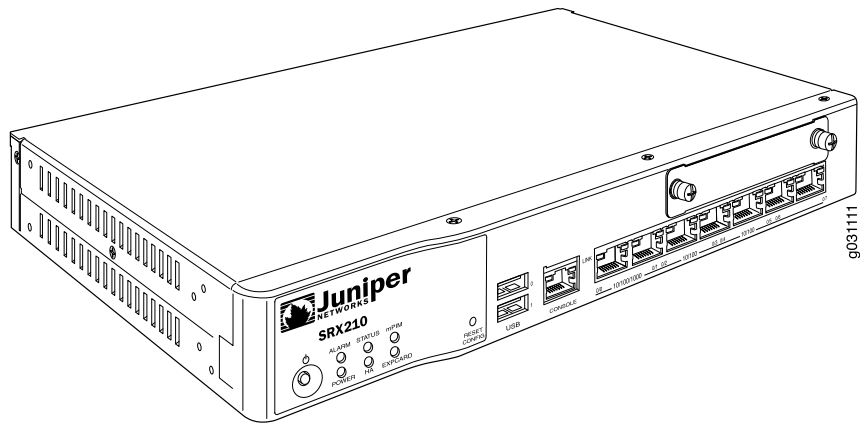
Table 5 on page 8 provides information on the physical specifications of the device.

Table 5: SRX210 Services Gateway Specifications

Specification	Value
Chassis height	1 unit (U)
Chassis width	11.02 in. (28 cm)
Chassis depth	7.04 in. (17.9 cm)

Table 5: SRX210 Services Gateway Specifications *(continued)*

Specification	Value
Chassis weight	■ 3.43 lb (1.56 kg) for SRX210 Services Gateway Low Memory and High Memory models ■ 3.50 lb (1.59 kg) for SRX210 Services Gateway with PoE ■ 3.76 lb. (1.70 kg) for SRX210 Services Gateway with Integrated Convergence Services
Average power consumption	■ SRX210 Services Gateway Low Memory model: 27 watts ■ SRX210 Services Gateway High Memory model: 28 watts ■ SRX210 Services Gateway PoE model: 34 watts (excluding PoE load) ■ SRX210 Services Gateway with Integrated Convergence Services model: 43 watts (excluding PoE load)
Altitude	■ No performance degradation up to 10,000 ft (3048 m) for SRX210 Services Gateway Low Memory, High Memory, and PoE models ■ No performance degradation up to 6561 ft (2000 m) for SRX210 Services Gateway with Integrated Convergence Services)
Relative humidity	5% to 90%, noncondensing
Temperature	Normal operation ensured in temperature range of 32°F (0°C) to 104°F (+40°C) Nonoperating storage temperature in shipping container: –40°F (–40°C) to 158°F (70°C)
Maximum thermal output	**NOTE:** These specifications are estimates and subject to change. ■ SRX210 Services Gateway Low Memory: 120 BTU/hour ■ SRX210 Services Gateway High Memory: 126 BTU/hour ■ SRX210 Services Gateway with PoE: 164 BTU/hour (Excluding PoE load) ■ SRX210 Services Gateway with Integrated Convergence Services: 232 BTU/hour (Excluding PoE load)
Noise level	70 dB(A) or less per EN ISO 7779

CAUTION: Before removing or installing components of a functioning services gateway, attach an electrostatic discharge (ESD) strap to an ESD point and place the other end of the strap around your bare wrist. Failure to use an ESD strap could result in damage to the services gateway.

Related Topics
- SRX210 Services Gateway Description on page 3
- SRX210 Services Gateway Front Panel and Back Panel Views (Low Memory, High Memory and PoE Version) on page 10
- Monitoring the SRX210 Services Gateway Components Using LEDs on page 120
- SRX210 Services Gateway Electrical Safety Guidelines and Warnings on page 150

SRX210 Services Gateway Front Panel and Back Panel Views (Low Memory, High Memory and PoE Version)

This topic contains views of the front panel and back panel of the SRX210 Services Gateway high memory, low memory, and Power over Ethernet (PoE) versions. This topic includes the following sections:

- SRX210 Services Gateway Front Panel on page 10
- SRX210 Services Gateway Back Panel on page 11

SRX210 Services Gateway Front Panel

Figure 3 on page 10 shows the front panel of the SRX210 Services Gateway.

Figure 3: SRX210 Services Gateway Front Panel
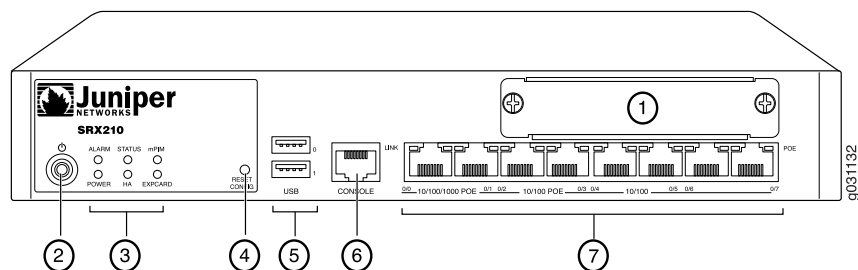
Table 6 on page 11 lists the front panel components of the services gateway.

NOTE: The numbers in Figure 3 on page 10 correspond to the numbers in Table 6 on page 11.

Table 6: SRX210 Services Gateway Front Panel Components

Number	Component
1	Mini-PIM slot
2	Power button
3	LEDs: Status, Alarm, Power, 3G ExpressCard, Mini-PIM, HA
4	Reset Config button
5	Universal Serial Bus (USB) ports
6	Console port
7	Gigabit Ethernet ports and Fast Ethernet ports

For more information on the front panel components, see the following topics:

■ SRX210 Services Gateway Built-In Interfaces on page 14

■ SRX210 Services Gateway LEDs on page 18

■ SRX210 Services Gateway Boot Devices and Dual-Root Partitioning Scheme on page 23

SRX210 Services Gateway Back Panel

Figure 4 on page 11 illustrates the back panel of the SRX210 Services Gateway.

Figure 4: SRX210 Services Gateway Back Panel
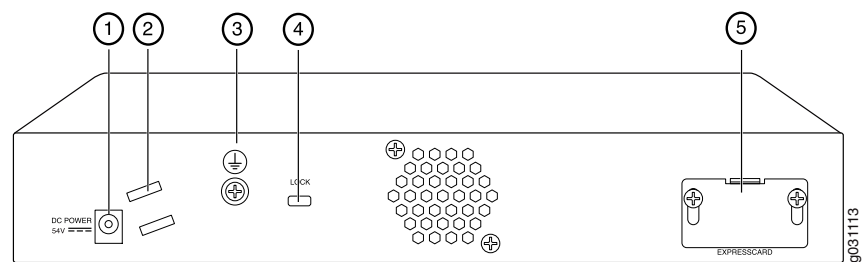
Table 7 on page 12 lists the back panel components of the SRX210 Services Gateway.

NOTE: The numbers in Figure 4 on page 11 correspond to the numbers in Table 7 on page 12.

Table 7: SRX210 Services Gateway Back Panel Components

Number	Component
1	Power supply point
2	Cable tie holder
3	Grounding point
4	Lock
5	ExpressCard slot

> **NOTE:** The cable tie holder provides support to hold the power cord on to the power supply point.
>
> The lock provides the capability to lock and secure the device to the installation site.

Related Topics
- SRX210 Services Gateway Specifications on page 7
- SRX210 Services Gateway Built-In Interfaces on page 14
- SRX210 Services Gateway LEDs on page 18
- SRX210 Services Gateway Boot Devices and Dual-Root Partitioning Scheme on page 23
- SRX210 Services Gateway Cooling System on page 24
- SRX210 Services Gateway Power Supply on page 26

SRX210 Services Gateway with Integrated Convergence Services Front Panel and Back Panel Views

This topic contains views of the front panel and back panel of the SRX210 Services Gateway with Integrated Convergence Services. This topic includes the following sections:

- SRX210 Services Gateway with Integrated Convergence Services Front Panel on page 12
- SRX210 Services Gateway with Integrated Convergence Services Back Panel on page 13

SRX210 Services Gateway with Integrated Convergence Services Front Panel

Figure 5 on page 13 shows the front panel of the SRX210 Services Gateway with Integrated Convergence Services.

Figure 5: SRX210 Services Gateway with Integrated Convergence Services Front Panel
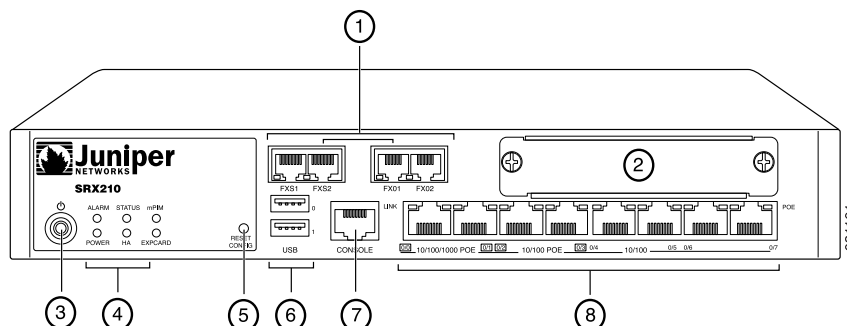
Table 8 on page 13 lists the front panel components of the services gateway.

NOTE: The numbers in Table 8 on page 13 correspond to the numbers in Figure 5 on page 13.

Table 8: SRX210 Services Gateway with Integrated Convergence Services Front Panel Components

Number	Component
1	FXO and FXS ports
2	Mini-PIM slot
3	Power button
4	LEDs- Status, Alarm, Power, 3G ExpressCard, Mini-PIM, HA
5	Reset Config button
6	Universal Serial Bus (USB) ports
7	Console port
8	Gigabit Ethernet ports and Fast Ethernet ports

SRX210 Services Gateway with Integrated Convergence Services Back Panel

Figure 6 on page 14 illustrates the back panel of the SRX210 Services Gateway with Integrated Convergence Services.

Figure 6: SRX210 Services Gateway with Integrated Convergence Services Back Panel
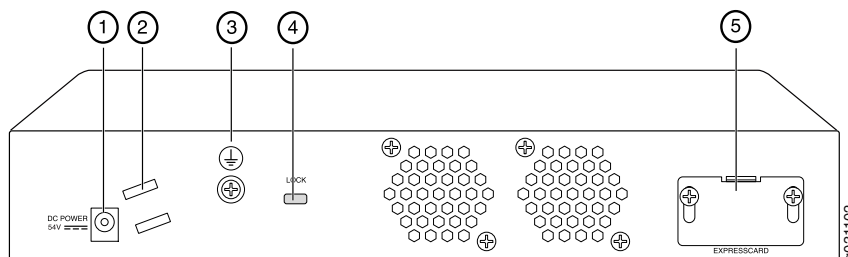
Table 9 on page 14 lists the back panel components of the SRX210 Services Gateway with Integrated Convergence Services.

NOTE: The numbers in Figure 6 on page 14 correspond to the numbers in Table 9 on page 14.

Table 9: SRX210 Services Gateway with Integrated Convergence Services Back Panel Components

Number	Component
1	Power supply point
2	Cable tie holder
3	Grounding point
4	Lock
5	ExpressCard slot

Related Topics
- SRX210 Services Gateway Specifications on page 7
- SRX210 Services Gateway Built-In Interfaces on page 14
- SRX210 Services Gateway LEDs on page 18
- SRX210 Services Gateway Boot Devices and Dual-Root Partitioning Scheme on page 23
- SRX210 Services Gateway Cooling System on page 24
- SRX210 Services Gateway Power Supply on page 26

SRX210 Services Gateway Built-In Interfaces

Table 10 on page 15 summarizes the interface ports supported on the SRX210 Services Gateway.

Table 10: SRX210 Services Gateway Built-In Hardware Interfaces

Interface Type	Specifications	Description
Gigabit Ethernet	■ Consist of two fixed ports ■ Are labeled as port ge–0/0/0 and port ge–0/0/1 on the front panel ■ Use an RJ-45 connector ■ Provide link speeds of 10/100/1000 Mbps ■ Operate in full-duplex and half-duplex modes ■ Support flow control ■ Support autonegotiation and autosensing Both Gigabit Ethernet ports support Power over Ethernet on the PoE and media gateway models of the SRX210 Services Gateway.	The Gigabit Ethernet ports can be used as follows: ■ To function as front-end network ports ■ To provide LAN and WAN connectivity to hubs, switches, local servers, and workstations ■ To forward incoming data packets to the device ■ To receive outgoing data packets from the device ■ To connect power devices to receive network connectivity and electric power (PoE functionality) (For the PoE and media gateway model of the SRX210 Services Gateway)
Fast Ethernet	■ Consist of six fixed ports ■ Are labeled as port fe–0/0/2 to port fe–0/0/7 on the front panel ■ Provide link speeds of 10/100 Mbps ■ Operate in full-duplex and half-duplex modes The first two Fast Ethernet ports support Power over Ethernet on the SRX210 Services Gateway (PoE version and media gateway version).	The Fast Ethernet ports can be used as follows: ■ To provide LAN connectivity to hubs, switches, local servers, and workstations ■ To forward incoming data packets to the device ■ To receive outgoing data packets from the device ■ To connect power devices to receive network connectivity and electric power (PoE functionality) (For the PoE and media gateway model of the SRX210 Services Gateway)

Table 10: SRX210 Services Gateway Built-In Hardware Interfaces *(continued)*

Interface Type	Specifications	Description
Universal Serial Bus (USB)	■ Consist of two ports ■ Function in full speed and high speed ■ Are compliant with USB revision 2.0	The USB ports can be used as follows: ■ To support a USB storage device that functions as a secondary boot device in case of the internal flash failure on startup, if the USB storage device is installed and configured **NOTE:** You must install and configure the USB storage device on the USB port to use it as secondary boot device. Also, the USB device must have JUNOS installed. ■ To provide the USB interfaces that are used to communicate with many types of Juniper supported USB storage devices. Contact your Juniper Networks customer service representative for more information.
Console	■ Consists of one port ■ Uses an RJ-45 serial cable connector ■ Supports the RS-232 (EIA-232) standard	The console port can be used as follows: ■ To provide the console interface ■ To function as a management port to log into a device directly ■ To configure the device using the CLI

Table 10: SRX210 Services Gateway Built-In Hardware Interfaces *(continued)*

Interface Type	Specifications	Description
Foreign Exchange Subscriber (FXS) interface	■ Consist of two ports ■ Use an RJ-11 connector	The FXS port can be used as follows: ■ To provide an interface to connect analog phones, fax machines, or similar devices ■ To supply battery power, ringing voltage, dial tone, and so on to the station **NOTE:** There is a hardware relay between the built-in FXO1 interface and the FXS2 interface. The relay automatically connects the FXS2 port and the FXO1 port in the event of a power failure.
Foreign Exchange Office (FXO) interface	■ Consist of two ports ■ Use an RJ-11 connector	The FXO port can be used to provide direct connection to the telephone exchange or Public Switched Telephone Networks (PSTN) central office
Mini-Physical Interface Module (Mini-PIM)	Consists of one slot for a Mini-PIM	The Mini-PIM slot can be used to provide LAN and WAN functionality along with connectivity to various media types. For more information about the supported Mini-PIMs, see the *SRX Series Services Gateways for the Branch Physical Interface Modules Hardware Guide*.

NOTE: We strongly recommend that only transceivers provided by Juniper Networks be used on an SRX210 Services Gateway. We cannot guarantee that the interface module will operate correctly if third-party transceivers are used. Contact Juniper Networks for the correct transceiver part number for your device.

Related Topics

- SRX210 Services Gateway Specifications on page 7

- SRX210 Services Gateway Front Panel and Back Panel Views (Low Memory, High Memory and PoE Version) on page 10

- SRX210 Services Gateway with Integrated Convergence Services Front Panel and Back Panel Views on page 12

- SRX210 Services Gateway LEDs on page 18

- SRX210 Services Gateway Boot Devices and Dual-Root Partitioning Scheme on page 23

- SRX210 Services Gateway Cooling System on page 24

- SRX210 Services Gateway Power Supply on page 26

SRX210 Services Gateway LEDs

This topic includes the following sections:

- Front Panel LEDs on page 18
- Ethernet Port LEDs on page 20
- Voice Interface Port LED on page 21

Front Panel LEDs

Figure 7 on page 18 shows the SRX210 Services Gateway front panel LEDs.

Table 11 on page 19 lists the LED indicators on the SRX210 Services Gateway front panel.

Figure 7: SRX210 Services Gateway Front Panel LEDs
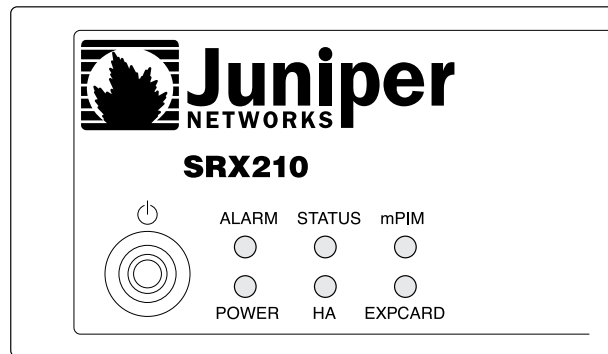
Table 11: SRX210 Services Gateway Front Panel Components LEDs

Component	Description	Usage
Alarm LED	The Alarm LED has the following indicator colors: ■ Red and steadily on indicates a major alarm. ■ Amber and steadily on indicates a minor alarm. ■ Off indicates that the device is starting up. **NOTE:** When the system is up and running, if the Alarm LED is off, it indicates that no alarms are present on the device.	The Alarm LED can be used to gather information on major or minor alarms or to determine if the device is functioning normally.
Status LED	The Status LED has the following indicator colors: ■ Green and steadily on indicates that the device is functioning normally. ■ Amber and steadily on indicates that the device is starting up. ■ Red and steadily on indicates that the device has failed.	The Status LED can be used to determine whether the device is starting up, is functioning normally, or has failed.
Mini-PIM LED	The Mini-PIM LED has the following indicator colors: ■ Green and steadily on indicates that the Mini-PIM is functioning normally. ■ Off indicates that the Mini-PIM is not present or not detected by the device.	The Mini-PIM LED can be used to determine if the Mini-PIM is present and detected by the device.
Power LED	The Power LED has the following indicator colors: ■ Green and steadily on indicates that the device is functioning normally. ■ Amber and steadily on indicates that the Power button has been pressed and quickly released. ■ Off indicates that the device is not receiving power.	The Power LED can be used to determine if the device is receiving power.
HA LED	The HA LED has the following indicator colors: ■ Green and steadily on indicates that all HA links are available. ■ Red and steadily on indicates that the HA links are not working as expected. ■ Amber and steadily on indicates that some HA links are not working as expected. ■ Off indicates that HA is not enabled.	The HA LED can be used to determine if high availability is enabled on the device.

Table 11: SRX210 Services Gateway Front Panel Components LEDs *(continued)*

Component	Description	Usage

3G ExpressCardLED	The 3G ExpressCard LED has the following indicator colors:
	
	■ Green and steadily on indicates that the ExpressCard is plugged in and the data call is established.
	
	■ Red and steadily on:
	
	  ■ Indicates that the ExpressCard plugged in is faulty or not detected by the device.
	
	  ■ Indicates that the ExpressCard is plugged in but not registered with the Network.
	
	■ Amber and steadily on indicates that the ExpressCard is plugged in and registered with the Network.
	
	■ Off indicates that the ExpressCard is not plugged in.
		The 3G ExpressCard LED provides information on the functioning of the ExpressCard slot.

Ethernet Port LEDs

On the SRX210 Services Gateway, each Gigabit Ethernet port and Fast Ethernet port has two LEDs. Figure 8 on page 20 shows the SRX210 Services Gateway Ethernet port LEDs.

Figure 8: SRX210 Services Gateway Ethernet Port LEDs
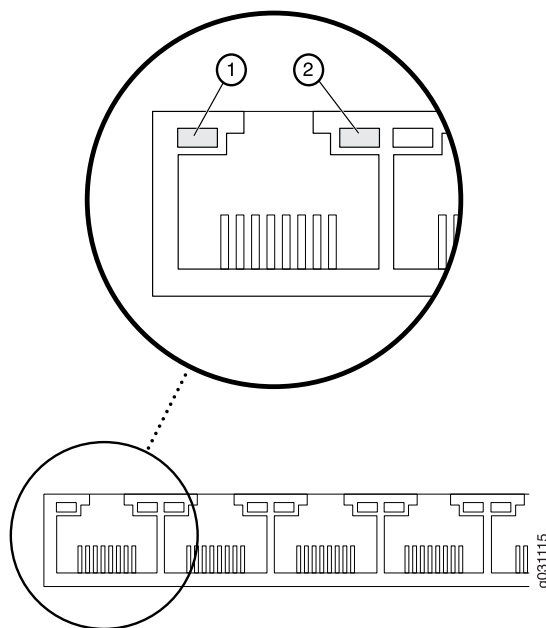
NOTE: The numbers in Figure 8 on page 20 correspond to the numbers in Table 12 on page 21.

Table 12 on page 21 describes the built-in Ethernet port LEDs.

Table 12: SRX210 Services Gateway Built-In Ethernet Port LEDs

Number	Function	Color	State	Description
1	TX/RX/LINK LED	Green	Blinking	Link is active. Data communication is taking place.
			Steady	Link is active. No data communication is taking place.
		Unlit	Off	Link is inactive.
2	PoE LED	Green	Steady	PoE (Power over Ethernet) is on and the connected power device is receiving power.
		Yellow	Steady	PoE (Power over Ethernet) is on, but the connected power device is not receiving power (device fault or not enough power).
		Unlit	Off	PoE is off.

NOTE: The PoE LED is enabled only on the Power over Ethernet (PoE) model of the SRX210 Services Gateway. For non-PoE models, the PoE LED remains off.

Voice Interface Port LED

On the SRX210 Services Gateway, each Voice Interface (FXO and FXS) port has a single LED indicating the status.

Figure 9 on page 22 shows the SRX210 Services Gateway Voice Interface port LEDs.

Figure 9: SRX210 Services Gateway Voice Interface Port LEDs
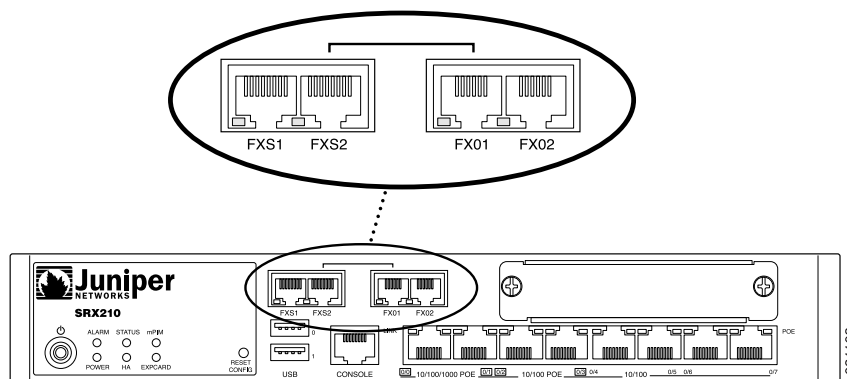
Table 13 on page 22 describes the Voice Interface port LEDs.

Table 13: SRX210 Services Gateway Voice Interface Port LEDs

LED	Color	State	Description
Voice Interface LEDs (FXS1, FXS2, FXO1, and FXO2)	Off	Unlit	Port is inactive.
	Green	Steady	Port is connected and active.
	Amber	On	Port is active and not ready for data communication.
	Green	Blinking	Port is active and data communication is taking place.
	Red	Blinking	Port is initializing. **NOTE:** The Voice Interface port LEDs glow red (blinking) while initializing. If there is an error, the LEDs remain red; otherwise, change to green.
	Red	Steady	Port has detected a hardware initialization failure.

Related Topics

- SRX210 Services Gateway Specifications on page 7

- SRX210 Services Gateway Front Panel and Back Panel Views (Low Memory, High Memory and PoE Version) on page 10

- SRX210 Services Gateway with Integrated Convergence Services Front Panel and Back Panel Views on page 12

- SRX210 Services Gateway Built-In Interfaces on page 14

- SRX210 Services Gateway Boot Devices and Dual-Root Partitioning Scheme on page 23

■   SRX210 Services Gateway Cooling System on page 24

■   SRX210 Services Gateway Power Supply on page 26

SRX210 Services Gateway Boot Devices and Dual-Root Partitioning Scheme

This topic includes the following sections:

■   Boot Devices on page 23

■   Dual-Root Partitioning Scheme on page 23

Boot Devices

The SRX210 Services Gateway can boot from two devices:

■   Internal NAND flash (default; always present)

■   USB storage key (alternate)

Dual-Root Partitioning Scheme

The dual-root partitions allow the SRX210 Services Gateways to remain functional if there is file system corruption and facilitate easy recovery of the corrupted file system.

The dual-root partitioning scheme keeps the primary and backup JUNOS Software images in two independently bootable root partitions. If the primary root partition becomes corrupted, the system will be able to boot from the backup JUNOS Software image located in the other root partition and remain fully functional.

When the SRX210 Services Gateway powers up, it tries to boot the JUNOS Software from the default storage media. If the device fails to boot from the default storage media, it tries to boot from the alternate storage media. With the dual-root partitioning scheme, the SRX210 Services Gateway first tries to boot the JUNOS Software from the primary root partition and then from the backup root partition on the default storage media. If both primary and backup root partitions of a media fail to boot, then the device tries to boot from the next available type of storage media. The SRX210 Services Gateway remains fully functional even if it boots the JUNOS Software from the backup root partition of storage media.

NOTE: SRX210 Services Gateway that ship from the factory with JUNOS Software Release 10.0 is formatted with the dual-root partitioning scheme.

Existing SRX210 Services Gateways that are running JUNOS Software Release 9.6 or earlier use the single-root partitioning scheme.

While upgrading these devices to JUNOS Software Release 10.0, you can choose to format the storage media with dual-root partitions (strongly recommended) or retain the existing single-root partitioning.

For instructions on upgrading to JUNOS Software Release 10.0, see the *SRX Series Release Notes*.

Related Topics
- SRX210 Services Gateway Specifications on page 7
- SRX210 Services Gateway Front Panel and Back Panel Views (Low Memory, High Memory and PoE Version) on page 10
- SRX210 Services Gateway with Integrated Convergence Services Front Panel and Back Panel Views on page 12
- SRX210 Services Gateway Power Supply on page 26

SRX210 Services Gateway Cooling System

The cooling system for the SRX210 Services Gateway with Low Memory, High Memory, or Power over Ethernet (PoE) includes one fixed fan. The SRX210 Services Gateway with Integrated Convergence Services has two fixed fans.

The cooling system works from side-to-rear in the services gateway chassis. The fans draw air through vents along the left and right sides of the chassis and exhaust the air through the rear side of the chassis.

The airflow produced by the fans keeps device components within the acceptable temperature range.

Figure 10 on page 25 shows the airflow through the chassis for the SRX210 Services Gateway with Low Memory, High Memory, and PoE models.

Figure 10: Airflow Through the Chassis (SRX210 Services Gateway with Low Memory, High Memory, and PoE Models)
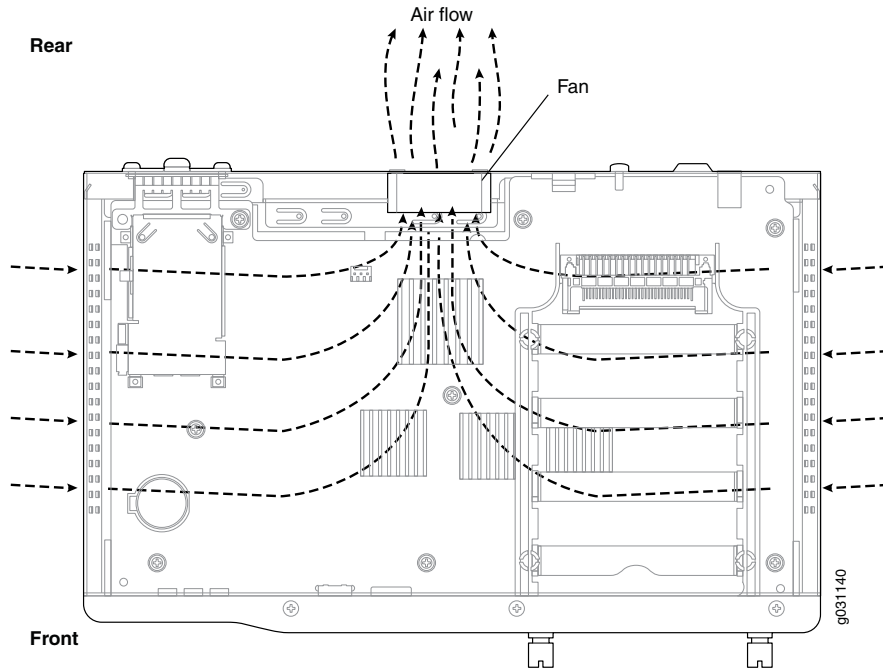
Figure 11 on page 26 shows the airflow through the chassis for the SRX210 Services Gateway with Integrated Convergence Services model.

Figure 11: Airflow Through the Chassis (SRX210 Services Gateway with Integrated Convergence Services Model)
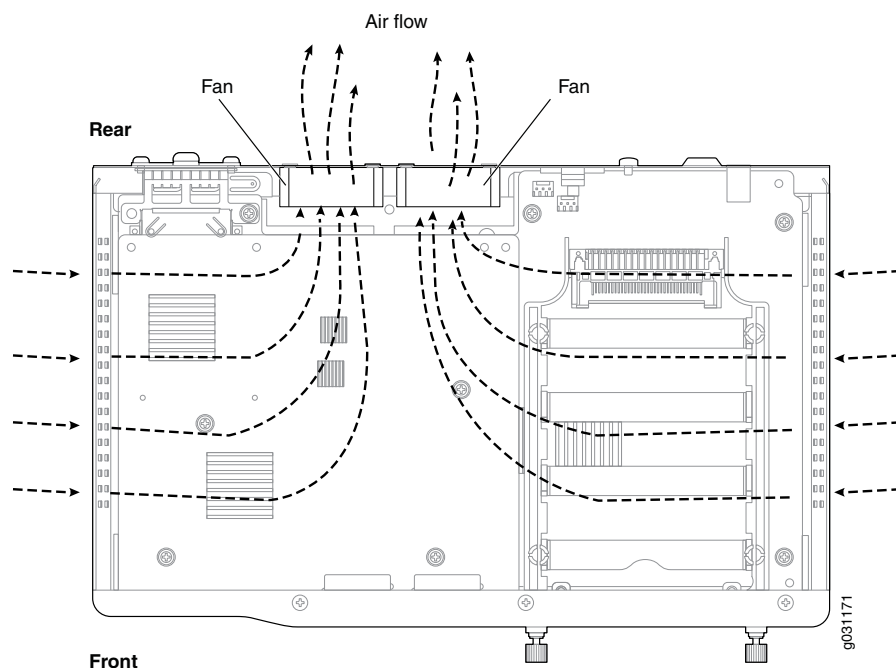
Related Topics
- SRX210 Services Gateway Specifications on page 7
- SRX210 Services Gateway Front Panel and Back Panel Views (Low Memory, High Memory and PoE Version) on page 10
- SRX210 Services Gateway with Integrated Convergence Services Front Panel and Back Panel Views on page 12
- SRX210 Services Gateway Power Supply on page 26

SRX210 Services Gateway Power Supply

The power supply for the SRX210 Services Gateway is external. You must use the power supply adapter provided by Juniper Networks to provide power to the services gateway.

Figure 12 on page 27 shows the label for the 48 V power supply.

Figure 12: SRX210 Services Gateway — 48 V Power Supply
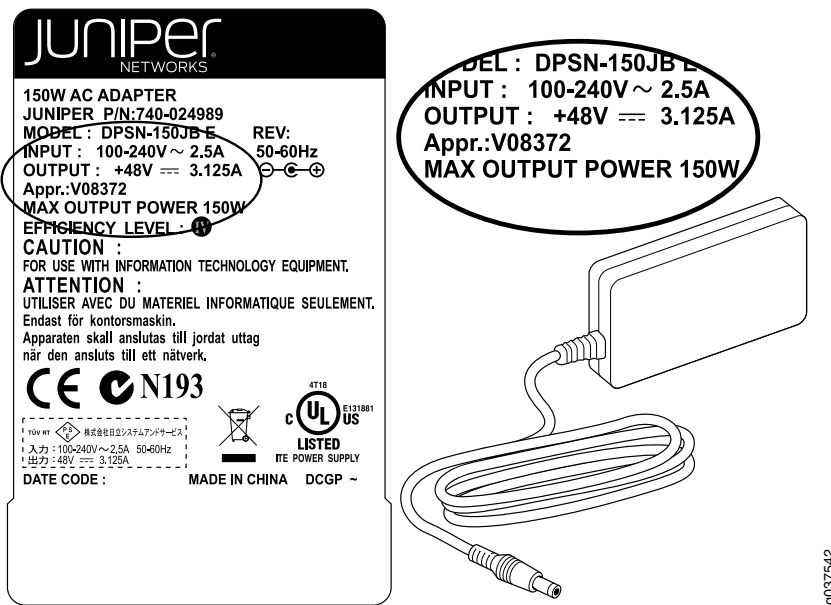
Figure 13 on page 27 shows the label for the 54 V power supply.

Figure 13: SRX210 Services Gateway — 54 V Power Supply
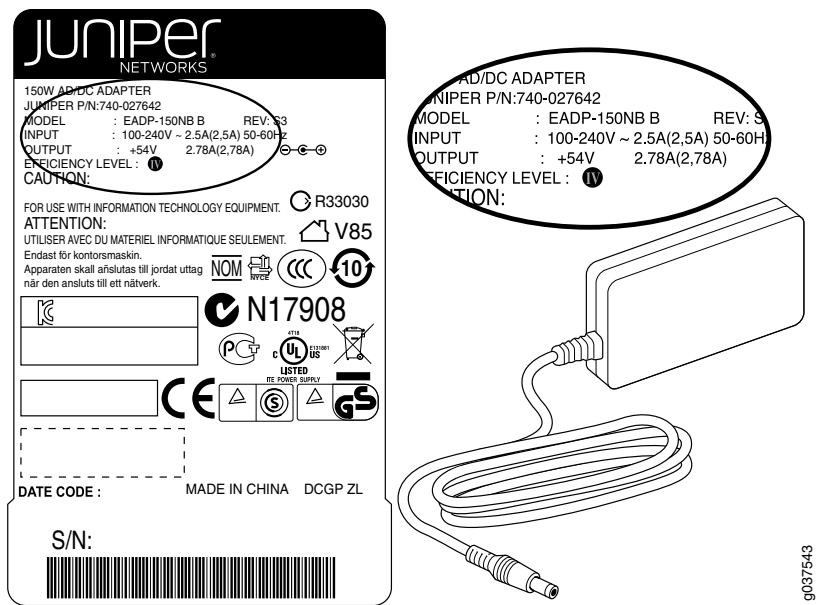
Related Topics   ■   SRX210 Services Gateway Specifications on page 7

■   SRX210 Services Gateway Front Panel and Back Panel Views (Low Memory, High Memory and PoE Version) on page 10

- SRX210 Services Gateway with Integrated Convergence Services Front Panel and Back Panel Views on page 12

- SRX210 Services Gateway Boot Devices and Dual-Root Partitioning Scheme on page 23

- SRX210 Services Gateway Cooling System on page 24

- Monitoring the SRX210 Services Gateway Power System on page 125

Chapter 3

SRX210 Services Gateway 3G ExpressCard

This chapter includes the following topics:

- SRX210 Services Gateway 3G ExpressCard Overview on page 29
- Installing the 3G ExpressCard in the SRX210 Services Gateway ExpressCard Slot on page 32
- SRX210 Services Gateway 3G ExpressCard Basic CLI Commands on page 33

SRX210 Services Gateway 3G ExpressCard Overview

This topic provides an overview of the SRX210 Services Gateway 3G ExpressCard and it includes the following sections:

- Introduction on page 29
- Supported Modem Types on page 29
- Using the 3G ExpressCard on page 30
- Key Features on page 30
- Physical Specifications on page 31

Introduction

Wireless WAN access is becoming widely available and comparably priced to ISDN and DSL. The SRX210 Services Gateway provides support for a wireless interface as a backup for primary interfaces such as Gigabit Ethernet or Fast Ethernet.

To facilitate wireless connectivity, the SRX210 Services Gateway has a 3G port with an ExpressCard interface on the back panel. For more information on SRX210 Services Gateway back panel, see "SRX210 Services Gateway Front Panel and Back Panel Views (Low Memory, High Memory and PoE Version)" on page 10.

Supported Modem Types

Table 14 on page 30 lists the modem types supported on the SRX210 Services Gateway.

Table 14: Juniper Networks Wireless Modems Supported by the SRX210 Services Gateway

Wireless Cards	Release Supported
EXPCD-3G-CDMA-V: 3G EVDO ExpressCard for Verizon Wireless. Currently available from Juniper Networks.	JUNOS Software Releases 9.6, 10.0, 10.1, and 10.2
EXPCD-3G-CDMA-S: 3G EVDO ExpressCard for Sprint. Currently available from Juniper Networks.	JUNOS Software Releases 9.6, 10.0, 10.1, and 10.2
Sierra Wireless AirCard 880E/881E supporting Global System for Mobile Communications (GSM) High-Speed Packet Access (HSPA) ExpressCard. Not available from Juniper Networks.	JUNOS Software Releases 9.5 and 9.6
Sierra Wireless AirCard AC501/AC502 supporting Global System for Mobile Communications (GSM) High-Speed Packet Access (HSUPA). Not available from Juniper Networks.	JUNOS Software Releases 10.1 and 10.2

Using the 3G ExpressCard

To use the ExpressCard, you plug it into the 3G ExpressCard slot, enabling you to dial a wireless call to the 3G wireless service provider network, which acts as an Internet gateway.

To use the 3G ExpressCard as a backup interface, you can use the dialer feature available in the services gateway.

For more information on configuring the 3G ExpressCard, see the *JUNOS Software Interfaces and Routing Configuration Guide.*

NOTE: The SRX210 Services Gateway does not support hot insertion and removal of the 3G ExpressCard.

Key Features

The 3G ExpressCard provides the following key features:

- Onboard Subscriber Identity Module (SIM) — All GSM cards have an onboard SIM. The service provider populates this SIM with the subscriber service parameters.

- Onboard nonvolatile RAM (NVRAM) — The Code Division Multiple Access (CDMA) cards have an onboard NVRAM.

- Activation of new cards through the CLI — You can activate CDMA ExpressCards from the JUNOS CLI.

- Unlocking ExpressCards — You can unlock GSM ExpressCards from the JUNOS CLI. If the SIM is locked, you need to unlock it before making a call.

NOTE: Only GSM cards support locking and unlocking of the SIM.

- Interface support — The ExpressCard interface supports the IP over PPP interface from the network through the wireless link.
- Dial-out support — The dialer interface can place calls and has multiple features such as dial-backup, dialer-watchlist, and dialer-filter. The dialer interface can use the ExpressCard to support this feature.

NOTE: The 3G ExpressCard does not support the dial-in feature.

- Card information availability — You can use CLI commands to obtain information on the ExpressCard, such as type, version, wireless status, and user profiles.
- Security
  - GSM cards support PIN lock to prevent unauthorized access and use of the wireless account.
  - You can use the CLI request commands to lock or unlock the SIM card.
  - You have the option to store the PIN code you provide in the services gateway configuration , so that the SIM can be unlocked without user intervention on each reboot or reset on the box.

NOTE: Currently all GSM cards support PIN-protected SIMs.

Physical Specifications

Table 15 on page 31 lists the physical parameters of the 3G ExpressCard.

Table 15: 3G ExpressCard Physical Specifications

Specification	Value
Type	Standard ExpressCard with 34 modules
ExpressCard width	34 mm (1.33 in.)
Thickness	5 mm (0.19 in.)
Connector pins	26
Max power consumption	1.3 watts

Table 15: 3G ExpressCard Physical Specifications *(continued)*

Specification	Value
Voltage supply	■ 3.3V (primary source) ■ 1.5V (secondary source)

Related Topics
- SRX210 Services Gateway 3G ExpressCard Basic CLI Commands on page 33
- Installing the 3G ExpressCard in the SRX210 Services Gateway ExpressCard Slot on page 32
- SRX210 Services Gateway Front Panel and Back Panel Views (Low Memory, High Memory and PoE Version) on page 10

Installing the 3G ExpressCard in the SRX210 Services Gateway ExpressCard Slot

> **TIP:** Placing the SRX210 Services Gateway on a flat, level surface, with the Juniper Networks logo facing up, will make it easier to align and insert the 3G ExpressCard in the ExpressCard slot.

> **CAUTION:** The SRX210 Services Gateway does not support hot insertion and removal of the 3G ExpressCard.

To install the 3G ExpressCard in the ExpressCard slot on the SRX210 Services Gateway:

1. Align the 3G ExpressCard as follows:
   - Ensure that the 3G ExpressCard is parallel with the surface on which the SRX210 Services Gateway is placed.
   - Ensure that the center of the 3G ExpressCard is aligned with the center of the ExpressCard slot on the SRX210 Services Gateway.

2. Study Figure 14 on page 33, which shows installation of the 3G ExpressCard on the SRX210 Services Gateway.

Figure 14: Installing 3G ExpressCard in the SRX210 Services Gateway
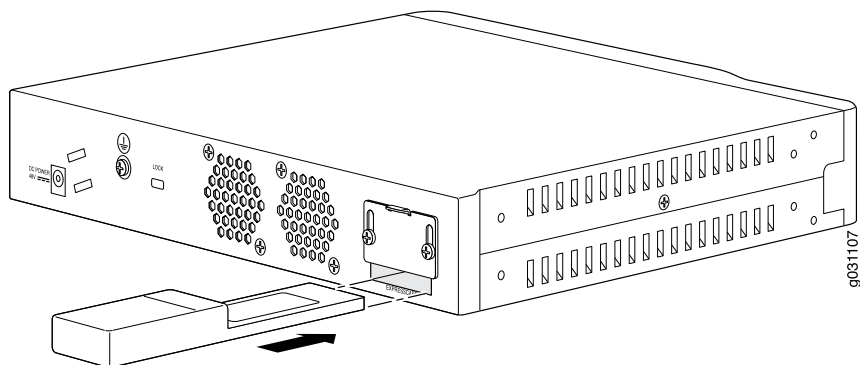
3. Insert the 3G ExpressCard slowly and firmly into the ExpressCard slot until the 3G ExpressCard is engaged in the slot as follows:

   ■ The 3G ExpressCard is designed to fit tightly in the slot. You will encounter two points of resistance while inserting the 3G ExpressCard into the slot. Use firm pressure as you insert the card.

   ■ You will encounter the first point of resistance when you begin to insert the 3G ExpressCard. After you align the 3G ExpressCard, lift the card slightly and use firm pressure to slide it into the slot.

   ■ When you have partially inserted the 3G ExpressCard, you will encounter the second point of resistance. Use additional pressure to finish inserting the 3G ExpressCard into the slot.

Related Topics ■ SRX210 Services Gateway 3G ExpressCard Overview on page 29

■ SRX210 Services Gateway 3G ExpressCard Basic CLI Commands on page 33

SRX210 Services Gateway 3G ExpressCard Basic CLI Commands

Table 16 on page 33 lists the basic CLI commands for operating the 3G ExpressCard on the SRX210 Services Gateway.

The 3G wireless interface uses the prefix cl in the syntax cl-*slot-number*/0/*port number*.

Table 16: SRX210 Services Gateway 3G ExpressCard Basic CLI Commands

Action	Command
Checks the status of the 3G ExpressCard.	show modem wireless interface cl-0/0/8
	show interfaces terse
CDMA ExpressCards	

Table 16: SRX210 Services Gateway 3G ExpressCard Basic CLI Commands *(continued)*

Action	Command
Activates the CDMA ExpressCard ■ IOTA — Activates Internet-based over air provisioning . ■ Manual activation — Requires manual entry of the required information. ■ OTASP — Activates over the air service provisioning.	request modem wireless activate ■ request modem wireless activate iota cl-0/0/8 ■ request modem wireless activate manual cl-0/0/8 msl *MSL value* mdn *MDN value* imsi *IMSI value* sid *SID value* nid *NID value* sip-user-id *SIP ID* sip-password *SIP_PASSWORD* ■ request modem wireless activate otasp cl-0/0/8 dial-string *calling number*
GSM	
Unlocks the GSM SIM.	request modem wireless gsm sim-unlock cl-0/0/8 pin
Unlocks the SIM automatically on reboot	set interfaces cl-0/0/ 8 cellular-options gsm-options sim-unlock-code
Recovers the SIM from the Pin Unlock Key (PUK) state When you attempt to unlock the SIM, if you enter a wrong PIN three times in a row, the SIM enters the PUK state.	request modem wireless gsm sim-unblock cl-0/0/8 puk *puk number*pin *new pin number* **NOTE:** You must obtain the PUK value from your cellular service provider.
Changes the PIN on the SIM.	request modem wireless gsm change-pin cl-0/0/8 old-pin *current pin* new-pin *new pin*

For more information about configuring the 3G wireless interface, see *JUNOS Software Interfaces and Routing Configuration Guide*.

Related Topics

■ SRX210 Services Gateway 3G ExpressCard Overview on page 29

■ Installing the 3G ExpressCard in the SRX210 Services Gateway ExpressCard Slot on page 32

Chapter 4

SRX210 Services Gateway Power over Ethernet Support

This chapter includes the following topics:

- SRX210 Services Gateway PoE Overview on page 35
- Configuring PoE Functionality on the SRX210 Services Gateway on page 37

SRX210 Services Gateway PoE Overview

This topic includes the following sections:

- Introduction on page 35
- PoE Classes and Power Ratings on page 36

Introduction

Power over Ethernet (PoE) is the implementation of the IEEE 802.3 AF and IEEE802.3 AT standards that allow both data and electric power to pass over a copper Ethernet LAN cable.

The SRX210 Services Gateway supports PoE on four ports, which supply electric power over the same ports that are used to connect network devices. PoE ports allow you to plug in devices that require both network connectivity and electric power, such as VoIP and IP phones and wireless access points.

You can configure the gateway to act as power sourcing equipment for devices connected on the designated ports.

Table 17 on page 35 lists the SRX210 Services Gateway PoE specifications.

Table 17: SRX210 Services Gateway PoE Specifications

Power Management Schemes	Values
Supported standards	■ IEEE 802.3 AF (PoE) ■ IEEE802.3 AT (PoE+) ■ Legacy (pre-standards)

Table 17: SRX210 Services Gateway PoE Specifications *(continued)*

Power Management Schemes	Values
Supported ports	The following ports support PoE: ■ ge-0/0/0 ■ ge-0/0/1 ■ fe-0/0/2 ■ fe-0/0/3
Total PoE power sourcing capacity	50 watts
Per-port power limit	30 watts
Power management modes	■ Static: power allocated for each interface can be configured ■ Class: power allocated for interfaces is decided based on the class of powered device connected

The IEEE 802.3 AF (PoE) functionality is supported on SRX210 Services Gateway PoE models that have power supply of 48V. The IEEE802.3 AT (PoE+) functionality is supported on SRX210 Services Gateway PoE models that have power supply of 54V. For more information, see "Adjusting the Power Supply Adapter Tray for the SRX210 Services Gateway for Rack-Mount Installation" on page 70.

NOTE:

■ The PoE+ functionality is available from JUNOS Software Release 10.2 or later.

■ The PoE+ functionality is available only if your gateway is using 54V power supply. You can order the 54V power supply from Juniper Networks. Contact your Juniper Networks customer service representative for more information.

PoE Classes and Power Ratings

A powered device is classified based on the maximum power that it draws across all input voltages and operational modes. When the class-based power management mode is configured on the services gateway, power is allocated by taking into account the maximum power ratings defined for the different classes of devices.

Table 18 on page 37 lists the classes and their power ratings as specified by the IEEE 802.3 AF standard.

Table 18: PoE Classes and Power Ratings on the SRX210 Services Gateway

Class	Maximum Power Level Output from the PoE Port
0	15.4 watts
1	4.0 watts
2	7.0 watts
3	15.4 watts
4	30.0 watts

Related Topics
- SRX210 Services Gateway Description on page 3
- SRX210 Services Gateway Specifications on page 7
- SRX210 Services Gateway Front Panel and Back Panel Views (Low Memory, High Memory and PoE Version) on page 10
- SRX210 Services Gateway Built-In Interfaces on page 14
- SRX210 Services Gateway LEDs on page 18
- Mini-Physical Interface Modules on the SRX210 Services Gateway
- SRX210 Services Gateway 3G ExpressCard Overview on page 29

Configuring PoE Functionality on the SRX210 Services Gateway

To enable the Power over Ethernet (PoE) feature support on your SRX210 Services Gateway, you must configure the services gateway.

You can configure PoE using the CLI configuration editor.

For more details on configuring PoE, see the *JUNOS Software Interfaces and Routing Configuration Guide*.

Related Topics
- SRX210 Services Gateway Description on page 3
- SRX210 Services Gateway Specifications on page 7
- SRX210 Services Gateway Front Panel and Back Panel Views (Low Memory, High Memory and PoE Version) on page 10
- SRX210 Services Gateway Built-In Interfaces on page 14
- SRX210 Services Gateway LEDs on page 18
- Mini-Physical Interface Modules on the SRX210 Services Gateway

Chapter 5

SRX210 Services Gateway with Integrated Convergence Services

This chapter includes the following topics:

- About the SRX210 Services Gateway with Integrated Convergence Services on page 39
- Understanding the Functions of the SRX210 Services Gateway with Integrated Convergence Services on page 41
- SRX210 Services Gateway Integrated Convergence Services Interoperability on page 42
- Configuring the SRX210 Services Gateway with Integrated Convergence Services on page 43

About the SRX210 Services Gateway with Integrated Convergence Services

This topic includes following sections:

- Basic Functions on page 40
- Supported Features on page 40
- Common Deployment Scenarios on page 41

Basic Functions

The availability of hardware and software for voice and data transmission on the same device is called *integrated convergence services*.

SRX210 Services Gateway with Integrated Convergence Services implements a media gateway and a survivable call server. The SRX210 Services Gateway with Integrated Convergence Services integrates voice and data capabilities and provides a generic SIP-based voice over IP (VoIP) Media Gateway (SVMG) capability for local public switched telephone network (PSTN) and legacy analog/fax/phone connectivity. This feature enables standard phones to be used for voice calls over the Internet.

The SRX210 Services Gateway with Integrated Convergence Services performs the following basic functions:

■   Bridges the VoIP network to the PSTN so that calls can be made from remote SIP and PSTN phones and routed to local analog telephones, fax machines, and local SIP phones behind the media gateway.

■   Assumes the call routing role as a survivable call server for local SIP or Analog phones, in the event of loss of WAN connections.

■   Supports emergency calling (E911) by providing the mechanism to detect emergency calls from local VoIP phones and passes these calls to the PSTN when detected.

■   Provides power failover support for one analog phone and PSTN FXO port.

Supported Features

The SRX210 Services Gateway with Integrated Convergence Services also offers the following additional features:

■   Digit manipulation for remapping digits

■   Caller ID support for detection and transmission of caller information (for U.S. standards)

■   Call waiting for SIP and analog phones in which the user is alerted about a pending, incoming call

■   Call hold and resume in which SIP calls may be placed on hold and resumed by the SIP phone user

■   Call waiting and call forwarding

■   Local auto attendant with a standard workflow, allowing the caller to enter an extension number to reach the call destination

■   Voice mail answering and retrieval through PSTN digit mapping

Common Deployment Scenarios

The SRX210 Services Gateway with Integrated Convergence Services is deployed in following environments:

- Enterprises that deploy VoIP in their headquarters and want to enable VoIP functionality for their branch offices.

- Services providers (SPs) who provide VoIP services to their business customers.

- Branch sites currently using a local key system or PBX that want to utilize SIP trunking services

Related Topics
- Understanding the Functions of the SRX210 Services Gateway with Integrated Convergence Services on page 41

- SRX210 Services Gateway Integrated Convergence Services Interoperability on page 42

- Configuring the SRX210 Services Gateway with Integrated Convergence Services on page 43

- SRX210 Services Gateway with Integrated Convergence Services Front Panel and Back Panel Views on page 12

Understanding the Functions of the SRX210 Services Gateway with Integrated Convergence Services

SRX210 Services Gateway with Integrated Convergence Services functions as follows:

- Analog telephones and fax machines are directly connected to the SRX210 Services Gateway with Integrated Convergence Services through Foreign Exchange Station (FXS) interfaces.

- The telephone exchange or PSTN central office is directly connected to the SRX210 Services Gateway with Integrated Convergence Services through Foreign Exchange Office (FXO) interfaces.

- The media gateway converts analog signals from FXS and FXO ports and digital TDM signals from T1/E1 ports to VoIP packets and sends them to the network after processing through JUNOS software secure routing and firewall flows. Similarly, the media gateway receives forwarded VoIP packets from the network, and converts them into analog signal or digital TDM signals and send them across the appropriate interface.

- The media gateway also provides power failover support in the event of power loss by providing a hardware relay between the built-in FXS2 port and FXO1 port, which automatically connects the two ports when the media gateway loses power.

NOTE: The 2-Port FXS/2-Port FXO Mini-PIM and the 4-Port FXO Mini-PIM does not support failover relay between any of the FXS and FXO ports.

- Telephony interface expansion available through Mini-PIM interface card option includes a 2–Port FXS/2–Port FXO Mini-PIM, 4–Port FXO Mini-PIM, and an IP Flex T1/E1 Mini-PIM with initial support for T1-CAS (loopstart only).

NOTE: For more information on Mini-PIMs, see the *SRX Series Services Gateways for the Branch Physical Interface Modules Hardware Guide*.

Related Topics
- About the SRX210 Services Gateway with Integrated Convergence Services on page 39
- SRX210 Services Gateway Integrated Convergence Services Interoperability on page 42
- Configuring the SRX210 Services Gateway with Integrated Convergence Services on page 43

SRX210 Services Gateway Integrated Convergence Services Interoperability

The SRX210 Services Gateway with Integrated Convergence Services aligns with the open convergence architecture and supports different brands of call servers and SIP phones.

Table 19 on page 42 summarizes the SIP phones, softphones, and analog devices supported by SRX210 Services Gateway with Integrated Convergence Services.

Table 19: SRX210 Services Gateway Integrated Convergence Services Interoperability

Phone Types	Devices
SIP phones	- Avaya 4600 and 9600 series - Polycom 300 and 500 series - Snom 300 series - Microsoft OCS-compatible phones - Cisco Unified SIP phones 7960 and 7961
Softphones	- SNOM 360 - Microsoft OCS client - X-Lite EyeBeam Mini-SIP - Avaya one-x

Table 19: SRX210 Services Gateway Integrated Convergence Services Interoperability *(continued)*

Phone Types	Devices
Analog devices	Any analog device including the phones, FAX machines, PBX or key systems, voice mail or answering machine, and analog paging systems.
SIP call servers	■ Avaya CM 5.2 with SES ■ Avaya ASM (Aura 1.x) ■ Microsoft OCS R1 and R2 ■ Asterisk 1.6.x (Open Source)

Related Topics
- About the SRX210 Services Gateway with Integrated Convergence Services on page 39
- Understanding the Functions of the SRX210 Services Gateway with Integrated Convergence Services on page 41
- Configuring the SRX210 Services Gateway with Integrated Convergence Services on page 43

Configuring the SRX210 Services Gateway with Integrated Convergence Services

To enable voice support on your SRX210 Services Gateway with Integrated Convergence Services, you must configure the services gateway.

You can configure the voice functionality using:

- CLI configuration editor
- J-Web configuration editor

For more information on configuring voice, see the *Integrated Convergence Services Configuration and Administration Guide for SRX Series Services Gateways*.

Related Topics
-
- Understanding the Functions of the SRX210 Services Gateway with Integrated Convergence Services on page 41
- SRX210 Services Gateway Integrated Convergence Services Interoperability on page 42

Chapter 6

SRX210 Services Gateway Mini-Physical Interface Modules

This chapter includes the following topic:

- SRX210 Services Gateway Mini-Physical Interface Modules on page 45

SRX210 Services Gateway Mini-Physical Interface Modules

The SRX210 Services Gateway supports Mini-Physical Interface Modules (Mini-PIMs).

A Mini-PIM is a network interface card (NIC) that is installed on the services gateway to provide physical connections to a LAN or a WAN. The Mini-PIM receives incoming packets from the network and transmits outgoing packets to the network. The Mini-PIMs supported on the services gateway are field-replaceable. The field replaceable Mini-PIMs are removable and insertable into the device. You can install a Mini-PIM into the Mini-PIM slot available on the front panel of the services gateway chassis.

For more information about supported Mini-PIMs, including how to install and configure Mini-PIMs, refer to the *SRX Series Services Gateways for the Branch Physical Interface Modules Hardware Guide*.

![Caution icon] **CAUTION:** The Mini-PIMs available on the SRX210 Services Gateway are not hot-swappable. You need to power off the device before removing or installing Mini-PIMs.

Related Topics
- SRX210 Services Gateway Description on page 3
- SRX210 Services Gateway Specifications on page 7
- SRX210 Services Gateway Hardware Features on page 4
- SRX210 Services Gateway Built-In Interfaces on page 14

Part 2

Setting Up the SRX210 Services Gateway

Chapter 7
Preparing the Site for the SRX210 Services Gateway Installation

This chapter provides a checklist to help you prepare your site for installation of the SRX210 Services Gateway. Read this section to make sure that your site has the proper operating environment and equipment.

This chapter includes the following topics:

- Site Preparation Checklist for the SRX210 Services Gateway on page 49
- General Site Guidelines for Installing the SRX210 Services Gateway on page 51
- SRX210 Services Gateway Cabinet Requirements on page 51
- SRX210 Services Gateway Rack Requirements on page 52
- Clearance Requirements for Airflow and Hardware Maintenance of the SRX210 Services Gateway on page 54
- SRX210 Services Gateway Electrical and Power Requirements on page 55

Site Preparation Checklist for the SRX210 Services Gateway

The checklist in Table 20 on page 49 summarizes the tasks you need to perform when preparing a site for installing the SRX210 Services Gateway.

Table 20: Site Preparation Checklist for the SRX210 Services Gateway Installation

Item or Task	Additional Information	Date and Notes
Environment		
Verify that environmental factors such as temperature and humidity do not exceed device tolerances.	"SRX210 Services Gateway Specifications" on page 7	
Power		

Table 20: Site Preparation Checklist for the SRX210 Services Gateway Installation *(continued)*

Item or Task	Additional Information	Date and Notes
■ Measure distance between external power sources and device installation site. ■ Locate sites for connection of system grounding. ■ Calculate the power consumption and requirements.	"SRX210 Services Gateway Site Electrical Wiring Guidelines" on page 157 "SRX210 Services Gateway Power Specifications and Requirements" on page 158	
Rack Installation		
■ Verify that your rack meets the minimum requirements. ■ Plan rack location, including required space clearances. ■ Secure the rack to the floor and building structure.	"SRX210 Services Gateway Rack Requirements" on page 52	
Cabinet Installation		
■ Verify that your cabinet meets the minimum requirements. ■ Plan the cabinet location, including required space clearances.	"SRX210 Services Gateway Cabinet Requirements" on page 51	
Wall Installation		
■ Verify that the area selected meets the minimum requirements. ■ Verify that you have the required hardware to proceed with the installation.	"Preparing the SRX210 Services Gateway for Wall-Mount Installation" on page 68	
Desktop Installation		
■ Verify that the area selected meets the minimum requirements. ■ Plan the installation location, including required space clearances and airflow requirements.	"Preparing the SRX210 Services Gateway for Desk-Mount Installation" on page 67	
Cables		
■ Acquire cables and connectors. ■ Review the maximum distance allowed for each cable. Choose the length of cable based on the distance between the hardware components being connected. ■ Plan the cable routing and management.	"Interface Cable and Wire Specifications for the SRX210 Services Gateway" on page 161	

Related Topics
- SRX210 Services Gateway Specifications on page 7
- General Site Guidelines for Installing the SRX210 Services Gateway on page 51

- Installation Overview for the SRX210 Services Gateway on page 57

- SRX210 Services Gateway Cabinet Requirements on page 51

- SRX210 Services Gateway Rack Requirements on page 52

- Clearance Requirements for Airflow and Hardware Maintenance of the SRX210 Services Gateway on page 54

General Site Guidelines for Installing the SRX210 Services Gateway

The following precautions help you plan an acceptable operating environment for your SRX210 Services Gateway and avoid environmentally caused equipment failures:

- For the cooling system to function properly, the airflow around the chassis must be unrestricted. Allow sufficient clearance between the front and back of the chassis and adjacent equipment. Ensure that there is adequate circulation in the installation location.

- Follow the ESD procedures to avoid damaging equipment. Static discharge can cause components to fail completely or intermittently over time.

- Ensure that the blank Mini-PIM panel is installed in the empty slot to prevent any interruption or reduction in the flow of air across internal components.

NOTE: Install the device only in restricted areas, such as dedicated equipment rooms and equipment closets, in accordance with Articles 110–16, 110–17, and 110–18 of the National Electrical Code, ANSI/NFPA 70.

Related Topics
- SRX210 Services Gateway Specifications on page 7

- SRX210 Services Gateway Safety Requirements, Warnings, and Guidelines on page 69

- SRX210 Services Gateway Cabinet Requirements on page 51

- SRX210 Services Gateway Rack Requirements on page 52

- Site Preparation Checklist for the SRX210 Services Gateway on page 49

- Clearance Requirements for Airflow and Hardware Maintenance of the SRX210 Services Gateway on page 54

SRX210 Services Gateway Cabinet Requirements

The SRX210 Services Gateway can be installed in a standard 800 mm (31.5 in.) or larger enclosed cabinet. Table 21 on page 52 provides the details on cabinet size, clearance, and airflow requirements.

Table 21: SRX210 Services Gateway Cabinet Requirements

Cabinet Requirements	Specifications
Cabinet size	19 in. (48.3 cm) as defined in *Cabinets, Racks, Panels, and Associated Equipment* (document number EIA-310–D) published by the Electronics Industry Association (http://www.eia.org). You can mount the services gateway horizontally in the cabinet.
Clearance requirements	■ The cabinet is at least 1 U (1.75 in. or 4.5 cm) high. ■ The outer edges of the mounting brackets extend the width of either chassis to 19 in. (48.2 cm), and the front of the chassis extends approximately 0.5 in. (1.27 cm) beyond the mounting brackets. ■ The minimum total clearance inside the cabinet is 30.7 in. (78 cm) between the inside of the front door and the inside of the rear door. **NOTE:** The holes for the mounting brackets chassis are spaced 1.25 in. (3.2 cm) apart, measured from the center of the hole.
Cabinet airflow requirements	■ Ensure sufficient ventilation through the cabinet is sufficient to prevent overheating. ■ Ensure adequate cool air supply to dissipate the thermal output of the device. ■ Install the device as close as possible to the front of the cabinet so that the cable management system clears the inside of the front door. Installing the chassis close to the front of the cabinet maximizes the clearance in the rear of the cabinet for critical airflow. ■ Route and dress all cables to minimize the blockage of airflow to and from the chassis. **NOTE:** A cabinet larger than the minimum required provides better airflow and reduces the chance of overheating.

Related Topics

■ General Site Guidelines for Installing the SRX210 Services Gateway on page 51

■ Site Preparation Checklist for the SRX210 Services Gateway on page 49

■ SRX210 Services Gateway Rack Requirements on page 52

■ Clearance Requirements for Airflow and Hardware Maintenance of the SRX210 Services Gateway on page 54

SRX210 Services Gateway Rack Requirements

The services gateway can be installed in a rack. Many types of racks are acceptable, including front-mount racks and four-post (telco) racks.

NOTE: The services gateway cannot be center-mounted in racks.

Table 22 on page 53 provides the details on rack size, clearance, and airflow requirements.

Table 22: Rack Requirements for the Services Gateway

Rack Requirements	Specifications
Rack Size	A 19 in. (48.3 cm) rack as defined in *Cabinets, Racks, Panels, and Associated Equipment* (document number EIA-310-D) published by the Electronics Industry Association (http://www.eia.org).
Rack Requirements	■ The outer edges of the mounting brackets extend the width of either chassis to 19 in. (48.3 cm). ■ The front of the chassis extends approximately 0.5 in. (1.27 cm) beyond the mounting ears. ■ Maximum permissible ambient temperature when two devices are placed side by side in a 19 in. rack is 40°C.
Spacing of Mounting Bracket and Flange Holes	■ The holes within each rack set are spaced at 1 U [1.75 in. (4.5 cm)]. The device can be mounted in any rack that provides holes or hole patterns spaced at 1-U [1.75 in. (4.5 cm)] increments. ■ The mounting brackets and front-mount flanges used to attach the chassis to a rack are designed to fasten to holes spaced at rack distances of 1 U (1.75 in.). ■ The mounting holes in the mounting brackets provided with the device are spaced 1.25 in. (3.2 cm) apart (top and bottom mounting hole).
Connecting to the Building Structure	Always secure the rack in which you are installing the services gateway to the structure of the building. If your geographical area is subject to earthquakes, bolt the rack to the floor. For maximum stability, also secure the rack to ceiling brackets.

Related Topics
- General Site Guidelines for Installing the SRX210 Services Gateway on page 51
- Site Preparation Checklist for the SRX210 Services Gateway on page 49
- SRX210 Services Gateway Cabinet Requirements on page 51
- Clearance Requirements for Airflow and Hardware Maintenance of the SRX210 Services Gateway on page 54

Clearance Requirements for Airflow and Hardware Maintenance of the SRX210 Services Gateway

When planning the installation site for the SRX210 Services Gateway, you need to allow sufficient clearance around the rack or cabinet where you are planning to install the device.

When planning the installation site for the services gateway, consider the following:

■ For the cooling system to function properly, the airflow around the chassis must be unrestricted.

■ For service personnel to remove and install hardware components, there must be adequate space at the front and back of the device. Allow at least 24 in. (61 cm) both in front of and behind the device.

■ If you are mounting the device in a rack with other equipment, or if you are placing it on the desktop near other equipment, ensure that the exhaust from other equipment does not blow into the intake vents of the chassis.

Table 23 on page 54 provides information on the clearance requirements for maintaining the optimum airflow and the distances for facilitating easy maintenance of the device.

Table 23: Clearance Requirements for the Services Gateway

Location	Recommended Clearance	Requirement for Clearance
Front of the chassis	2.5 in. (6.35 cm)	Space for service personnel to remove and install hardware components **NOTE:** More space is required for installing and removing Mini-PIMs.
Rear of the chassis	2.5 in. (6.35 cm)	Space for service personnel to remove and install hardware components
Between front-mounting flange and rack or cabinet edge	2.5 in. (6.35 cm)	Space for cable management and organization
Between side of the chassis and any non-heat-producing surface such as a wall or cabinet side	2.5 in. (6.35 cm)	Space for the cooling system to function properly and to maintain unrestricted airflow around the chassis
Between side of the chassis and devices that have fans or blowers	2.5 in. (6.35 cm)	Space for the cooling system to function properly and to maintain unrestricted airflow around the chassis

Related Topics
- SRX210 Services Gateway Description on page 3
- General Site Guidelines for Installing the SRX210 Services Gateway on page 51
- Site Preparation Checklist for the SRX210 Services Gateway on page 49
- SRX210 Services Gateway Cabinet Requirements on page 51
- SRX210 Services Gateway Rack Requirements on page 52

SRX210 Services Gateway Electrical and Power Requirements

There are factors you must consider while planning the electrical wiring and power availability at your site. These factors include the following requirements:

- Power specifications and requirements for the device
- Electrical wiring guidelines for the device installation site
- Power, connection, and power cord specifications for the device
- Grounding guidelines and specifications for the device

Related Topics
- SRX210 Services Gateway Site Electrical Wiring Guidelines on page 157
- SRX210 Services Gateway Power Specifications and Requirements on page 158
- Site Preparation Checklist for the SRX210 Services Gateway on page 49

Chapter 8

Installation Overview for the SRX210 Services Gateway

This chapter includes the following topic:

■ Installation Overview for the SRX210 Services Gateway on page 57

Installation Overview for the SRX210 Services Gateway

After you have prepared your installation site, you are ready to unpack and install the services gateway. It is important to proceed through the installation process as shown in Table 24 on page 57.

Table 24: Installation Process Order for the SRX210 Services Gateway

Step	Task	For more information, see
1	Review the safety guidelines explained.	"SRX210 Services Gateway General Safety Guidelines and Warnings" on page 133
2	Verify that you have prepared your site for the installation of the services gateway using the checklist.	"Site Preparation Checklist for the SRX210 Services Gateway" on page 49
3	Unpack the services gateway and verify that the parts are received.	"Unpacking the SRX210 Services Gateway" on page 61
4	Prepare the services gateway for installation.	"Preparing the SRX210 Services Gateway for Rack-Mount, Desk-Mount, and Wall-Mount Installation" on page 65
5	Install the services gateway.	■ Installing the SRX210 Services Gateway in a Rack on page 71 ■ Installing the SRX210 Services Gateway on a Desk on page 75 ■ Installing the SRX210 Services Gateway on a Wall on page 76
6	Connect cables to external devices.	"Connecting and Organizing Interface Cables to the SRX210 Services Gateway" on page 83

Table 24: Installation Process Order for the SRX210 Services Gateway *(continued)*

Step	Task	For more information, see
7	Connect the grounding cables.	"Grounding the SRX210 Services Gateway" on page 84
8	Power on the services gateway.	"Powering On and Powering Off the SRX210 Services Gateway" on page 85

Related Topics
- Unpacking the SRX210 Services Gateway on page 61
- General Site Guidelines for Installing the SRX210 Services Gateway on page 51
- Preparing the SRX210 Services Gateway for Rack-Mount, Desk-Mount, and Wall-Mount Installation on page 65

Chapter 9

Required Tools and Parts for Installing and Maintaining the SRX210 Services Gateway

This chapter includes the following topic:

- Required Tools and Parts for Installing and Maintaining the SRX210 Services Gateway on page 59

Required Tools and Parts for Installing and Maintaining the SRX210 Services Gateway

Table 25 on page 59 lists the tools and equipments required to install and maintain the SRX210 Services Gateway.

Table 25: Required Tools and Parts for Installing and Maintaining the SRX210 Services Gateway

Task	Tools and Parts	Related Topic
Installing the SRX210 Services Gateway	- Phillips (+) screwdriver, number 1 - Tie wrap	- Installing the SRX210 Services Gateway in a Rack on page 71 - Installing the SRX210 Services Gateway on a Desk on page 75 - Installing the SRX210 Services Gateway on a Wall on page 76
Connecting the SRX210 Services Gateway	Electrostatic discharge (ESD) grounding wrist strap	"Connecting the SRX210 Services Gateway to the Power Supply" on page 81
Grounding the SRX210 Services Gateway	Phillips (+) screwdriver, number 1	"Grounding the SRX210 Services Gateway" on page 84

Table 25: Required Tools and Parts for Installing and Maintaining the SRX210 Services Gateway *(continued)*

Task	Tools and Parts	Related Topic
Packing the SRX210 Services Gateway	■ Blank panel to cover empty Mini-PIM slot ■ Electrostatic bag or antistatic mat, for each component ■ Electrostatic discharge (ESD) grounding wrist strap	"Packing the SRX210 Services Gateway and Components for Shipment" on page 171

Related Topics
- Unpacking the SRX210 Services Gateway on page 61
- Grounding the SRX210 Services Gateway on page 84
- Connecting the SRX210 Services Gateway to the Power Supply on page 81
- Packing the SRX210 Services Gateway and Components for Shipment on page 171

Chapter 10

Unpacking the SRX210 Services Gateway

This chapter includes the following topics:

- Unpacking the SRX210 Services Gateway on page 61
- Verifying Parts Received with the SRX210 Services Gateway on page 61

Unpacking the SRX210 Services Gateway

The SRX210 Services Gateway is shipped in a cardboard carton. The carton also contains an accessory box and the *SRX210 Services Gateway Getting Started Guide*.

NOTE: The device is maximally protected inside the shipping carton. Do not unpack it until you are ready to begin installation.

To unpack the SRX210 Services Gateway:

1. Open the box in which the device is shipped.
2. Verify the parts received against the lists in "Verifying Parts Received with the SRX210 Services Gateway" on page 61.
3. Store the shipping box and packing material in case you need to return or move the device at a later time.

Related Topics
- Required Tools and Parts for Installing and Maintaining the SRX210 Services Gateway on page 59
- Verifying Parts Received with the SRX210 Services Gateway on page 61
- Preparing the SRX210 Services Gateway for Rack-Mount, Desk-Mount, and Wall-Mount Installation on page 65
- Installation Overview for the SRX210 Services Gateway on page 57

Verifying Parts Received with the SRX210 Services Gateway

The SRX210 Services Gateway shipment package contains a packing list that includes all parts and accessories available with the device. Check the parts in the shipment

against the items on the packing list. The packing list specifies the part numbers and descriptions of each part in your order.

If any part is missing, contact your Juniper Networks customer service representative.

A fully configured SRX210 Services Gateway contains the chassis with installed components, listed in Table 26 on page 62, and an accessory box, which contains the parts listed in Table 27 on page 62.

NOTE: The parts shipped with your device can vary depending on the configuration you ordered.

Table 26: Parts List for a Fully Configured SRX210 Services Gateway

Component	Quantity
■ For Low Memory model (SRX210B): SRX210 Services Gateway with 2xGE + 6xFE ports, 1xMini-PIM slot, and base memory (512 MB RAM, 1GB Flash) ■ For High Memory model (SRX210H): SRX210 Services Gateway with 2xGE + 6xFE ports, 1xMini-PIM slot, and high memory (1GB RAM, 1GB Flash) ■ For PoE model (SRX210H-POE): SRX210 Services Gateway with 2xGE + 6xFE ports, 1xMini-PIM slot, high memory (1GB RAM, 1GB Flash), 4 ports of POE 802.11AT (50 watts across 4 ports) ■ For Voice model (SRX210H-P-MGW): SRX210 Services Gateway with 2xGE + 6xFE ports, 1xMini-PIM slot, high memory (1GB RAM, 1GB Flash), 4 ports POE (50 watts) and Media Gateway with 2 FXO and 2 FXS ports	1
■ Power supply adapter (60 watts for Low Memory and High Memory models) ■ Power supply adapter (150 watts for PoE and Voice models)	1
3-Prong Power Cord	1
DB-9 to RJ-45 Adapter, Straight Through, 7 feet	1

Table 27: Accessory Parts List for the SRX210 Services Gateway

Part	Quantity
Juniper Networks Product Warranty	1
End User License Agreement	1

Table 27: Accessory Parts List for the SRX210 Services Gateway *(continued)*

Part	Quantity
Quick Start Guide	1
Security Products Safety Guide	1
Juniper Compliance Form Letter	1
Product Registration	1
Tie Wrap	1

NOTE: The mounting kits available for rack, wall, and desk installation of the SRX210 Services Gateway must be ordered separately. Contact your Juniper Networks customer service representative for more information.

NOTE: The Mini-Physical Interface Modules (Mini-PIMs) are not shipped with the device. You have to order them separately. Contact your Juniper Networks customer service representative for more information.

Related Topics

- Required Tools and Parts for Installing and Maintaining the SRX210 Services Gateway on page 59

- Unpacking the SRX210 Services Gateway on page 61

- Preparing the SRX210 Services Gateway for Rack-Mount, Desk-Mount, and Wall-Mount Installation on page 65

Chapter 11

Preparing the SRX210 Services Gateway for Installation

This chapter includes the following topics:

- Preparing the SRX210 Services Gateway for Rack-Mount, Desk-Mount, and Wall-Mount Installation on page 65
- Preparing the SRX210 Services Gateway for Rack-Mount Installation on page 66
- Preparing the SRX210 Services Gateway for Desk-Mount Installation on page 67
- Preparing the SRX210 Services Gateway for Wall-Mount Installation on page 68

Preparing the SRX210 Services Gateway for Rack-Mount, Desk-Mount, and Wall-Mount Installation

You can mount an SRX210 Services Gateway in a rack, on a desk, or on a wall. See the following topics for more information:

- Preparing the SRX210 Services Gateway for Rack-Mount Installation on page 66
- Preparing the SRX210 Services Gateway for Desk-Mount Installation on page 67
- Preparing the SRX210 Services Gateway for Wall-Mount Installation on page 68

The mounting kits for rack, wall, and desk installation of the SRX210 Services Gateway must be ordered separately. Contact your Juniper Networks customer service representative for more information.

Related Topics
- Site Preparation Checklist for the SRX210 Services Gateway on page 49
- Unpacking the SRX210 Services Gateway on page 61
- Clearance Requirements for Airflow and Hardware Maintenance of the SRX210 Services Gateway on page 54
- Preparing the SRX210 Services Gateway for Rack-Mount Installation on page 66
- Preparing the SRX210 Services Gateway for Desk-Mount Installation on page 67
- Preparing the SRX210 Services Gateway for Wall-Mount Installation on page 68

Preparing the SRX210 Services Gateway for Rack-Mount Installation

You can mount an SRX210 Services Gateway on four-post (telco) racks, enclosed cabinets, and open-frame racks.

NOTE: The SRX210 Services Gateway cannot be center-mounted in racks.

Table 28 on page 66 provides the list of tasks you need to perform before installing the device.

Table 28: SRX210 Services Gateway Preinstallation Checklist for Rack-Mount Installation

Task	Additional Information
Verify that the site meets the requirements.	"Site Preparation Checklist for the SRX210 Services Gateway" on page 49
Verify that the racks or cabinets meet the specific requirements.	"SRX210 Services Gateway Rack Requirements" on page 52
Place the rack or cabinet in its permanent location, allowing adequate clearance for airflow and maintenance, and secure it to the building structure.	"Clearance Requirements for Airflow and Hardware Maintenance of the SRX210 Services Gateway" on page 54
Remove the services gateway chassis from the shipping carton.	"Unpacking the SRX210 Services Gateway" on page 61
Verify that you have the following parts available in your rack-mounting kit for the SRX210 Services Gateway: ■ Rack-mounting brackets ■ Mounting screws ■ Power supply adapter tray with screws ■ Adapter stopper bracket	
Adjust the power supply adapter tray.	"Adjusting the Power Supply Adapter Tray for the SRX210 Services Gateway for Rack-Mount Installation" on page 70

NOTE: The rack-mounting kit is not shipped with the device and must be ordered separately.

Related Topics
- Site Preparation Checklist for the SRX210 Services Gateway on page 49
- Clearance Requirements for Airflow and Hardware Maintenance of the SRX210 Services Gateway on page 54
- Unpacking the SRX210 Services Gateway on page 61
- Preparing the SRX210 Services Gateway for Rack-Mount, Desk-Mount, and Wall-Mount Installation on page 65
- Preparing the SRX210 Services Gateway for Desk-Mount Installation on page 67
- Preparing the SRX210 Services Gateway for Wall-Mount Installation on page 68

Preparing the SRX210 Services Gateway for Desk-Mount Installation

You can mount an SRX210 Services Gateway on a desk or other level surface horizontally or vertically. The four rubber feet attached to the chassis provide stability.

Table 29 on page 67 provides the list of tasks you need to perform before installing the device.

Table 29: SRX210 Services Gateway Preinstallation Checklist for Desk-Mount Installation

Task	Additional Information
Verify that the site meets the requirements.	"Site Preparation Checklist for the SRX210 Services Gateway" on page 49
Place the desk in its permanent location, allowing adequate clearance for airflow and maintenance, and secure it to the building structure.	"Clearance Requirements for Airflow and Hardware Maintenance of the SRX210 Services Gateway" on page 54
Remove the services gateway chassis from the shipping carton.	"Unpacking the SRX210 Services Gateway" on page 61
Verify that you have the following parts available in your desk-mounting kit to mount the SRX210 Services Gateway vertically: ■ Vertical stand ■ Screws	

NOTE: If you are mounting the services gateway horizontally on a desk, ensure that the chassis is attached with the rubber feet.

NOTE: The vertical desk-mounting kit is not shipped with the device and must be ordered separately.

Related Topics
- Site Preparation Checklist for the SRX210 Services Gateway on page 49
- Clearance Requirements for Airflow and Hardware Maintenance of the SRX210 Services Gateway on page 54
- Unpacking the SRX210 Services Gateway on page 61
- Preparing the SRX210 Services Gateway for Rack-Mount Installation on page 66
- Preparing the SRX210 Services Gateway for Wall-Mount Installation on page 68

Preparing the SRX210 Services Gateway for Wall-Mount Installation

You can mount an SRX210 Services Gateway on a wall. The four rubber feet attached to the chassis provide stability.

Table 30 on page 68 provides the list of tasks you need to perform before installing the device.

Table 30: SRX210 Services Gateway Preinstallation Checklist for Wall-Mount Installation

Task	Additional Information
Verify that the site meets the requirements.	"Site Preparation Checklist for the SRX210 Services Gateway" on page 49
Remove the services gateway chassis from the shipping carton.	"Unpacking the SRX210 Services Gateway" on page 61
Verify that you have the following parts available in your wall-mounting kit to mount the SRX210 Services Gateway on wall: ■ Wall-mounting brackets ■ Screws	

NOTE: The wall-mounting kit is not shipped with the device and must be ordered separately.

Related Topics
- Site Preparation Checklist for the SRX210 Services Gateway on page 49
- Unpacking the SRX210 Services Gateway on page 61
- Preparing the SRX210 Services Gateway for Rack-Mount Installation on page 66
- Preparing the SRX210 Services Gateway for Desk-Mount Installation on page 67

Chapter 12
Installing the SRX210 Services Gateway

This chapter includes the following topics:

■ SRX210 Services Gateway Safety Requirements, Warnings, and Guidelines on page 69

■ SRX210 Services Gateway Installation on page 69

■ Replacing or Installing Mini-Physical Interface Modules in the SRX210 Services Gateway on page 78

SRX210 Services Gateway Safety Requirements, Warnings, and Guidelines

To avoid harm to yourself or the device as you install and maintain it, follow the guidelines for working with and near electrical equipment, as well as the safety procedures for working with devices. For a discussion of how to make the installation site a safe environment and a list of safety warnings, see the Appendix for Safety and Regulatory Compliance Information.

> **NOTE:** Providing an exhaustive set of guidelines for working with electrical equipment is beyond the scope of this guide.

Related Topics ■ General Site Guidelines for Installing the SRX210 Services Gateway on page 51

■ Required Tools and Parts for Installing and Maintaining the SRX210 Services Gateway on page 59

■ Preparing the SRX210 Services Gateway for Rack-Mount, Desk-Mount, and Wall-Mount Installation on page 65

■ General Site Guidelines for Installing the SRX 210 Services Gateway

SRX210 Services Gateway Installation

You can install the SRX210 Services Gateway in a rack, on a desk, or on a wall. The device includes rubber feet for desk and wall mounting. The mounting brackets are optional accessories.

Install the device as appropriate for your site using one of the following procedures:

- Adjusting the Power Supply Adapter Tray for the SRX210 Services Gateway for Rack-Mount Installation on page 70

- Installing the SRX210 Services Gateway in a Rack on page 71

- Installing the SRX210 Services Gateway on a Desk on page 75

- Installing the SRX210 Services Gateway on a Wall on page 76

Adjusting the Power Supply Adapter Tray for the SRX210 Services Gateway for Rack-Mount Installation

This topic provides details on the power supply adapters provided with different models of the SRX210 Services Gateway and the procedure for adjusting the power supply adapter tray to hold the power supply adapter.

The following power supply adapters are provided with the SRX210 Services Gateway:

- 60-watt power supply adapter for the SRX210 Services Gateway Low Memory and High Memory models

- 150-watt power supply adapter for the SRX210 Services Gateway with PoE and the SRX210 Services Gateway with Integrated Convergence Services

To adjust the power supply adapter tray:

- To accommodate the 60-watt power supply, use the two 420–028535 screws to attach the adapter stopper brackets at the point on the chassis marked B.

  Figure 15 on page 70 shows the adjustments to the power supply adapter tray required for the 60-watt power supply.
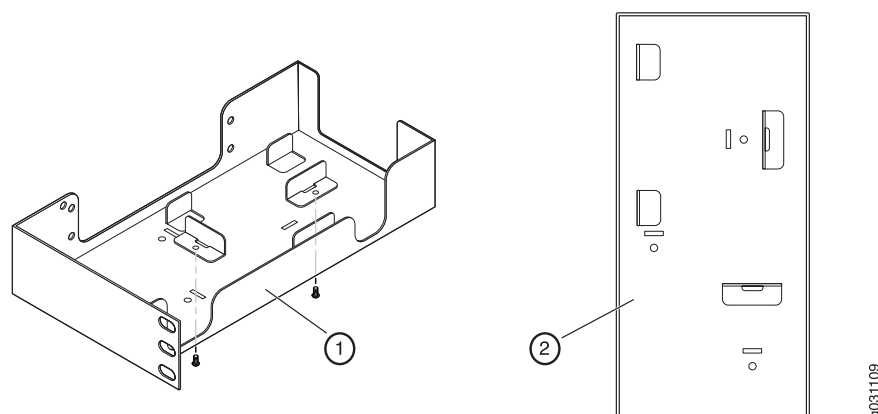
Figure 15: Adjusting the Power Supply Adapter Tray to Accommodate the 60-Watt Power Supply

1. Locations for the adapter stopper brackets in the power supply adapter tray

2. Fully configured power supply adapter tray

■ To accommodate the 150-watt power supply, use the 420–028535 screw to attach the adapter stopper bracket at the point on the chassis marked A.

Figure 16 on page 71 shows the adjustments to the power supply adapter tray required for the 150-watt power supply.

Figure 16: Adjusting the Power Supply Adapter Tray to Accommodate the 150-Watt Power Supply
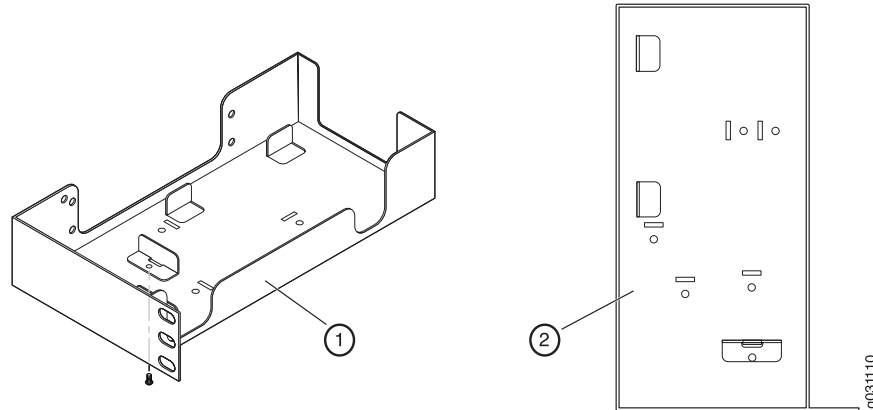
1. Locations for the adapter stopper brackets in the power supply adapter tray
2. Fully configured power supply adapter tray

Related Topics
- Preparing the SRX210 Services Gateway for Rack-Mount, Desk-Mount, and Wall-Mount Installation on page 65
- Preparing the SRX210 Services Gateway for Rack-Mount Installation on page 66

Installing the SRX210 Services Gateway in a Rack

You can front-mount the SRX210 Services Gateway in a rack. Many types of racks are acceptable, including four-post (telco) racks, enclosed cabinets, and open-frame racks. For more information about the type of rack or cabinet the SRX210 Services Gateway can be installed into, see "SRX210 Services Gateway Rack Requirements" on page 52.

> ℹ️ **NOTE:** The rack-mounting kit is not shipped with the device and must be ordered separately.

NOTE:

■ If you are installing multiple devices in one rack, install the lowest one first and proceed upward in the rack.

■ Ensure that the rubber feet from the base of the chassis are removed for rack installation.

To install the device in a rack:

1. Position a mounting bracket on each side of the chassis as shown in Figure 17 on page 72.

Figure 17: Installation of SRX210 Services Gateway in a Rack — Positioning Mounting Brackets
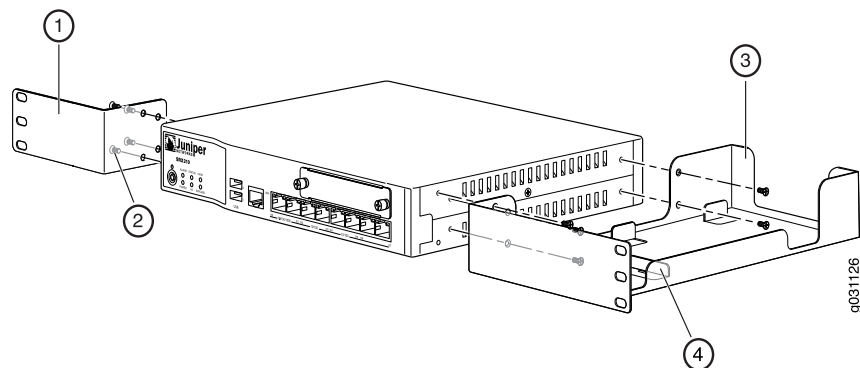
Table 31 on page 72 lists the parts used for installing the SRX210 Services Gateway on the rack. The numbers in Figure 17 on page 72 correspond to the numbers in Table 31 on page 72.

Table 31: SRX210 Services Gateway Rack Installation Parts

S.No	Part
1	Mounting brackets
2	Screws (mounting bracket)
3	Power supply adapter tray
4	Adapter stopper bracket

2. Use a number-1 Phillips screwdriver to install the screws that secure the mounting brackets and power supply adapter tray to the chassis as shown in Figure 18 on page 73.

Figure 18: SRX210 Services Gateway Rack Installation — Securing Mounting Brackets and Power Supply Adapter Tray
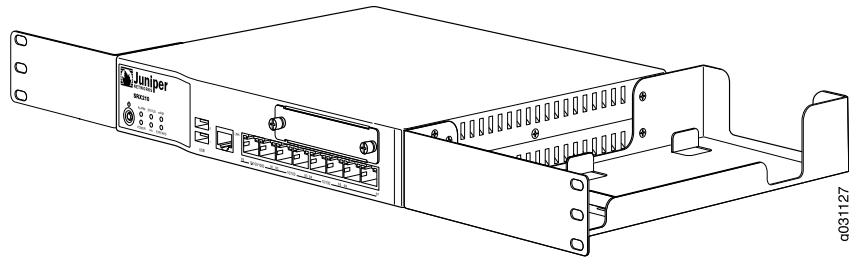
3. Place the power supply adapter in the tray as shown in Figure 19 on page 73.

Figure 19: SRX210 Services Gateway Rack Installation — Positioning Power Supply Adapter Tray
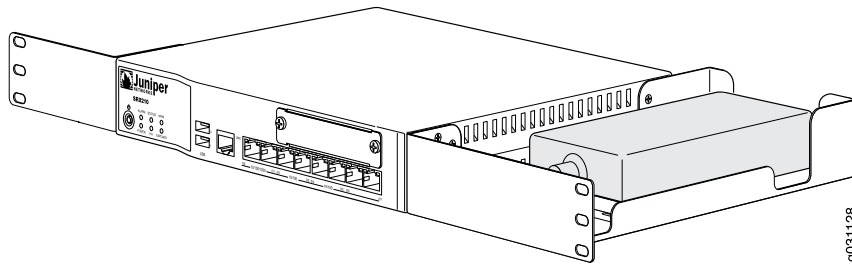
4. Have one person grasp the sides of the device, lift it, and position it in the rack.

5. Align the bottom hole in each mounting bracket with a hole in each rack rail as shown in Figure 20 on page 74, making sure the chassis is level.

Figure 20: SRX210 Services Gateway Rack Installation — Hanging the Services Gateway in a Rack
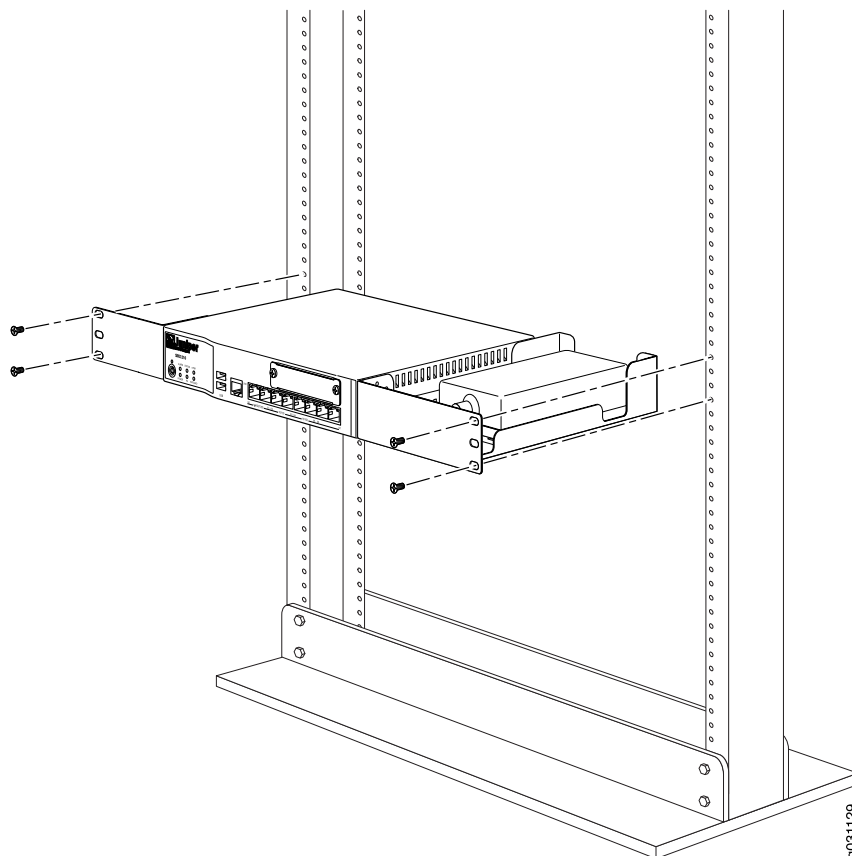
6. Have a second person install a mounting screw into each of the two aligned holes. Use a number-3 Phillips screwdriver to tighten the screws.

7. Install the second screw in each mounting bracket.

8. Verify that the mounting screws on one side of the rack are aligned with the mounting screws on the opposite side and that the device is level.

Related Topics
- SRX210 Services Gateway General Safety Guidelines and Warnings on page 133
- Required Tools and Parts for Installing and Maintaining the SRX210 Services Gateway on page 59
- Preparing the SRX210 Services Gateway for Rack-Mount Installation on page 66
- Adjusting the Power Supply Adapter Tray for the SRX210 Services Gateway for Rack-Mount Installation on page 70
- Installing the SRX210 Services Gateway on a Desk on page 75
- Installing the SRX210 Services Gateway on a Wall on page 76

Installing the SRX210 Services Gateway on a Desk

Follow these guidelines when installing the device on a desk:

■ You can install the SRX210 Services Gateway on a desk, table, or other level surface.

■ The device is shipped with the rubber feet attached. The rubber feet are necessary to stabilize the device on the desk.

■ You can install the device in a horizontal or vertical position.

■ The vertical position requires the vertical installation kit, which consists of a vertical installation stand with the rubber feet attached.

NOTE: The desk-mounting kit is not shipped with the device and must be ordered separately.

To install the device in a horizontal position:

The horizontal position is the standard installation position and does not require the vertical installation kit.

1. Make sure that the rubber feet are attached to the chassis.

2. Place the device on a desk with the Juniper Networks logo embossed on the top cover facing up.

To install the device in a vertical position:

1. Place the device on a flat and level surface with the Juniper Networks logo embossed on the top cover facing up.

2. Attach the vertical stand to the right side of the chassis using the specified screws as shown in Figure 21 on page 75.

Figure 21: SRX210 Services Gateway Desk Installation — Attaching Vertical Stand
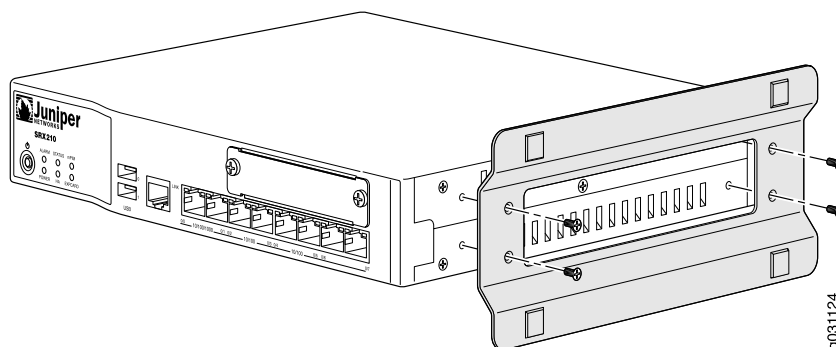
3. Place the chassis vertically on the desk with the stand resting on the desk as shown in Figure 22 on page 76.

Figure 22: SRX210 Services Gateway Desk Installation — Placing the Services Gateway on Desk
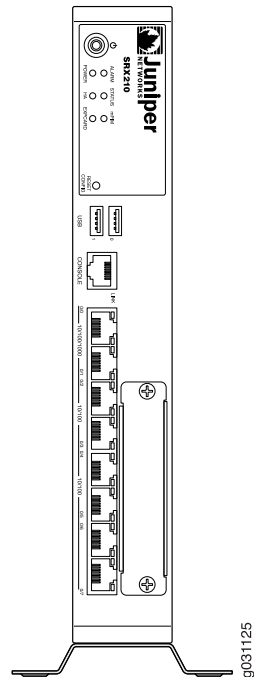
Installing the SRX210 Services Gateway on a Wall

You can install the SRX210 Services Gateway on a wall.

NOTE: The wall-mounting kit is not shipped with the device and must be ordered separately.

To install the device on a wall:

1. Place the device on a flat and level surface with Juniper Networks logo embossed on the top cover facing up. Ensure that rubber feet are attached to the bottom of the chassis.

2. Position a mounting bracket on each side of the chassis as shown in Figure 23 on page 77.

Figure 23: SRX210 Services Gateway Wall Installation — Attaching Mounting Brackets
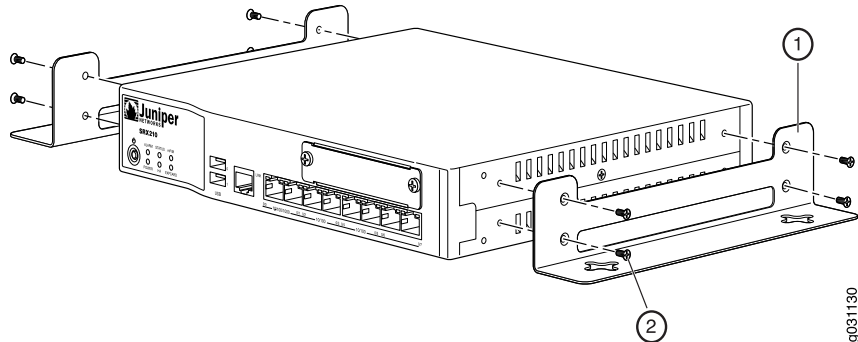
Table 32 on page 77 lists the parts used for installing the SRX210 Services Gateway on a wall. The numbers in Figure 23 on page 77 correspond to the numbers in Table 32 on page 77.

Table 32: SRX210 Services Gateway Wall Installation Parts

Numbers	Part
1	Mounting brackets
2	Screws (mounting bracket)

3. Use a number-1 Phillips screwdriver to install the screws that secure the mounting brackets to the chassis.

4. If you are using wall anchors to support the chassis, install two pairs of anchors on the wall with the mounting brackets attached.

5. Have one person grasp the sides of the device, lift it, and position it on the wall.

6. Have a second person install two pairs of mounting screws through the bracket holes on either side of the device to secure it to the wall.

7. Verify that the mounting screws on one side are aligned with the mounting screws on the opposite side and that the device is level (see Figure 24 on page 78).

Figure 24: SRX210 Services Gateway Wall Installation — Hanging the Services Gateway on Wall
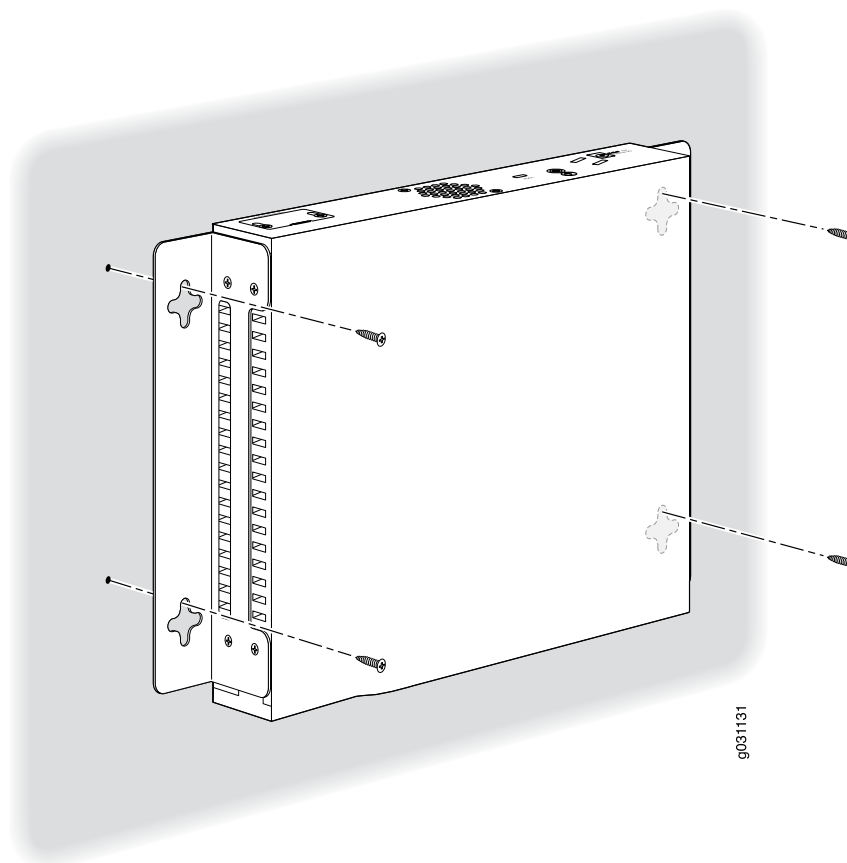
g031131

Related Topics
- SRX210 Services Gateway General Safety Guidelines and Warnings on page 133
- Required Tools and Parts for Installing and Maintaining the SRX210 Services Gateway on page 59
- Preparing the SRX210 Services Gateway for Rack-Mount Installation on page 66
- Adjusting the Power Supply Adapter Tray for the SRX210 Services Gateway for Rack-Mount Installation on page 70
- Installing the SRX210 Services Gateway on a Desk on page 75
- Installing the SRX210 Services Gateway on a Wall on page 76

Replacing or Installing Mini-Physical Interface Modules in the SRX210 Services Gateway

Mini-Physical Interface Modules (Mini-PIMs) are circuit boards that you can install in a device for enhanced functionality based on your requirements. They enable you to easily add or change physical interfaces on a device.

The Mini-Physical Interface Module (Mini-PIM) slot is covered with a blank faceplate to maintain proper airflow through the services gateway. Before installing the Mini-PIM, you must remove the faceplate.

See the *SRX Series Services Gateways for the Branch Physical Interface Modules Hardware Guide* for information about installing Mini-PIMs.

NOTE: The Mini-PIMs available on the SRX210 Services Gateway are not hot-swappable. You need to power off the device before removing or installing Mini-PIMs.

Related Topics
- SRX210 Services Gateway Installation Safety Guidelines and Warnings on page 138
- Installing the SRX210 Services Gateway on a Desk on page 75
- Installing the SRX210 Services Gateway on a Wall on page 76
- Installing the SRX210 Services Gateway in a Rack on page 71

Chapter 13

Connecting, Grounding, and Powering On the SRX210 Services Gateway

This chapter includes the following topics:

■   Connecting the SRX210 Services Gateway to the Power Supply on page 81

■   Connecting and Organizing Interface Cables to the SRX210 Services Gateway on page 83

■   Grounding the SRX210 Services Gateway on page 84

■   Powering On and Powering Off the SRX210 Services Gateway on page 85

Connecting the SRX210 Services Gateway to the Power Supply

To connect the device to the power supply:

CAUTION: Before connecting the device to the power supply, attach an ESD strap to an ESD point and place the other end of the strap around your bare wrist.

NOTE: If you are installing your services gateway on a desk, ensure that your device is adequately grounded using the grounding point on the back panel of the chassis.

1.   Plug the DC connector end of the power cable into the power connector on the back of the device (see Figure 25 on page 82).

2.   Plug the AC adapter end of the power cable into an AC power outlet.

Figure 25: Connecting the SRX210 Services Gateway to the Power Supply
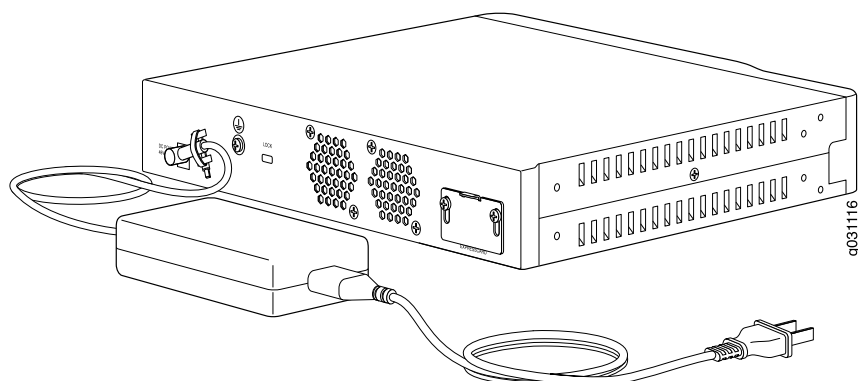
NOTE: The device must be connected to earth ground during normal operation. The protective earthing terminal on the rear of the chassis is provided to connect the device to ground.

CAUTION: We recommend using a surge protector for the power connection.

NOTE: Use the cable tie holder to secure the power cord on to the power supply point.

NOTE: We strongly recommend that you use only the 3-pin power cord supplied with your services gateway. If you are using a 2-pin power cord, then ensure that your device is adequately grounded using the grounding point available on back panel of chassis.

Related Topics

- Required Tools and Parts for Installing and Maintaining the SRX210 Services Gateway on page 59
- Grounding the SRX210 Services Gateway on page 84
- Connecting and Organizing Interface Cables to the SRX210 Services Gateway on page 83
- SRX210 Services Gateway General Safety Guidelines and Warnings on page 133

Connecting and Organizing Interface Cables to the SRX210 Services Gateway

You can connect the interfaces installed in the services gateway to various network media. Each type of interface on the services gateway uses a particular medium to transmit data. You must configure each network interface before it can operate on the device.

To connect and organize an interface cable to the device:

1. Have ready a length of the type of cable used by the interface.

2. Insert the cable connector into the cable connector port on the interface faceplate.

3. Arrange network cables as follows to prevent them from dislodging or developing stress points:

   ■ Secure cables so that they are not supporting their own weight as they hang to the floor.

   ■ Place excess cable out of the way in neatly coiled loops.

   ■ Use fasteners to maintain the shape of cable loops.

Related Topics
■ Connecting the SRX210 Services Gateway to the Power Supply on page 81

■ Grounding the SRX210 Services Gateway on page 84

■ Interface Cable and Wire Specifications for the SRX210 Services Gateway on page 161

■ SRX210 Services Gateway Installation Safety Guidelines and Warnings on page 138

Grounding the SRX210 Services Gateway

To meet safety and electromagnetic interference (EMI) requirements and to ensure proper operation, you must adequately ground the SRX210 Services Gateway before connecting power.

Figure 26 on page 84 illustrates connecting a grounding cable to the services gateway.

Figure 26: Grounding the SRX210 Services Gateway
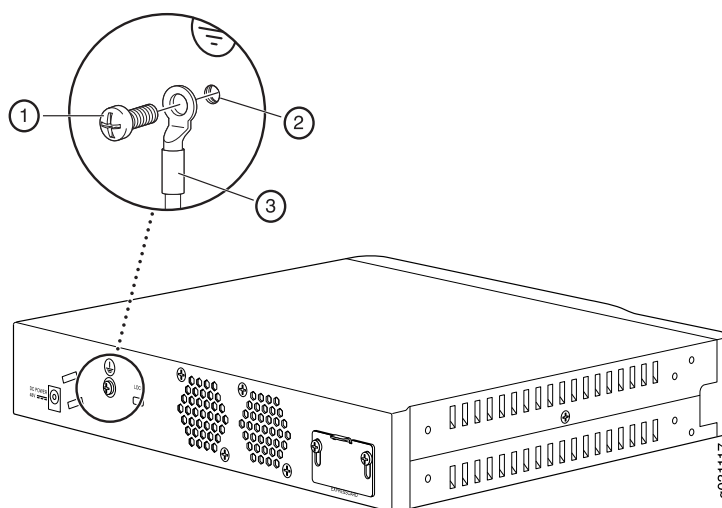
You ground the device by connecting a grounding cable to earth ground and then attaching it to the chassis grounding points using one 6-32 UNC screw.

Table 33 on page 84 lists the specifications of the grounding cable used with the device.

Table 33: Grounding Cable Specifications for the Services Gateway

Grounding Requirement	Specification
Grounding cable	14 AWG single-strand wire cable
Amperage of grounding cable	Up to 4 A
Grounding lug	Ring-type, vinyl-insulated TV14-6R lug or equivalent

⚠ **CAUTION:** Before device installation begins, a licensed electrician must attach a cable lug to the grounding and power cables that you use. A cable with an incorrectly attached lug can damage the device (for example, by causing a short circuit).

To ground the device:

1. Connect the grounding cable to a proper earth ground.

2. Verify that a licensed electrician has attached the cable lug to the grounding cable.

3. Place the grounding cable lug over the grounding point on the upper rear of the chassis.

4. Secure the grounding cable lug to the grounding point with the screw.

5. Dress the grounding cable and verify that it does not touch or block access to the services gateway components and that it does not cause anyone to trip on it.

NOTE: The device should be permanently connected to ground during normal operation.

Related Topics
- Connecting the SRX210 Services Gateway to the Power Supply on page 81
- Connecting and Organizing Interface Cables to the SRX210 Services Gateway on page 83
- SRX210 Services Gateway Grounding Specifications on page 159
- Powering On and Powering Off the SRX210 Services Gateway on page 85
- SRX210 Services Gateway General Safety Guidelines and Warnings on page 133

Powering On and Powering Off the SRX210 Services Gateway

This topic describes the following procedures:

1. Powering On the SRX210 Services Gateway on page 85
2. Powering Off the SRX210 Services Gateway on page 86
3. Resetting the SRX210 Services Gateway on page 87

Powering On the SRX210 Services Gateway

To power on the services gateway:

1. Ensure that you have connected the power supply to the device.

2. Insert the plug of the power supply adapter into an AC power source receptacle.

3. Turn on the power to the AC power receptacle.

The device starts automatically as the power supply completes its startup sequence. The Power LED lights up during startup and remains on steadily when the device is operating normally.

NOTE: After the power supply is turned on, it can take up to 60 seconds for status indicators—such as the Status and Power LEDs—to show that the power supply is functioning normally.

NOTE: It is recommended to issue the CLI command request system power-off when you want to power off the device immediately after the device is powered on.

Powering Off the SRX210 Services Gateway

You can power off the services gateway in one of the following ways:

- Graceful shutdown — Press and release the Power button. The device begins gracefully shutting down the operating system and then powers itself off.

- Immediate shutdown — Press the Power button and hold it for more than ten seconds. The device immediately powers itself off without shutting down the operating system.

NOTE: Do not press the Power button while the device is shutting down.

WARNING: Use the graceful shutdown method to halt, power off, or reboot the services gateway. Use the immediate shutdown method as a last resort to recover the services gateway if the services gateway operating system is not responding to the graceful shutdown method.

CAUTION: Immediate shutdown can result in data loss and corruption of the file system.

NOTE: To remove power completely from the device, unplug the AC power cord or switch off the power source.

After powering off a power supply, wait at least 10 seconds before turning it back on. After powering on a power supply, wait at least 10 seconds before turning it off.

The Power button on the services gateway is a standby power switch.

If you press the Power button to power off the device when it is still connected to a power source, 12 V (Low Memory and High Memory models) /48 V (PoE and Voice models) power will still be available in the chassis and the device will be fully powered off.

TIP: When you are powering off the device, the system displays the following message: Turning the system power off. You can now safely remove the power cable to completely disconnect the power from the device.

NOTE: You can use the request system reboot CLI command to schedule a reboot of the services gateway using request system reboot.

For more information about halting, powering off, or rebooting the services gateway using CLI, see the *JUNOS Software Administration Guide.*

Resetting the SRX210 Services Gateway

The Reset Config button located at the front panel of the SRX210 Services Gateway removes the current configuration and resets the device to the default configuration. The button is recessed in the front panel to prevent it from being pressed accidentally.

NOTE: Pressing and holding the Reset Config button for 15 seconds or more deletes all configurations on the device and loads and commits the factory configuration.

Related Topics
- Connecting the SRX210 Services Gateway to the Power Supply on page 81
- Grounding the SRX210 Services Gateway on page 84
- SRX210 Services Gateway Front Panel and Back Panel Views (Low Memory, High Memory and PoE Version) on page 10
- Using the Reset Config Button on the SRX210 Services Gateway on page 126
- SRX210 Services Gateway LEDs on page 18

Chapter 14

SRX210 Services Gateway Autoinstallation

This chapter includes the following topic:

- SRX210 Services Gateway Autoinstallation Overview on page 89

SRX210 Services Gateway Autoinstallation Overview

The autoinstallation process begins any time a services gateway is powered on and cannot locate a valid configuration file in the internal flash. Typically, a configuration file is unavailable when a services gateway is powered on for the first time or if the configuration file is deleted from the internal flash. The autoinstallation feature enables you to deploy multiple services gateways from a central location in the network.

If you are setting up many devices, autoinstallation can help automate the configuration process by loading configuration files onto new or existing devices automatically over the network. You can use either the J-Web configuration editor or the CLI configuration editor to configure a device for autoinstallation.

For the autoinstallation process to work, you must store one or more host-specific or default configuration files on a configuration server in the network and have a service available—typically Dynamic Host Configuration Protocol (DHCP)—to assign an IP address to the services gateway.

Autoinstallation takes place automatically when you connect an Ethernet port on a new services gateway to the network and power on the device. To simplify the process, you can explicitly enable autoinstallation on a device and specify a configuration server, an autoinstallation interface, and a protocol for IP address acquisition.

For more information about configuring autoinstallation, see the *JUNOS Software Administration Guide*.

**Related Topics**
- Connecting the SRX210 Services Gateway to the Power Supply on page 81
- Grounding the SRX210 Services Gateway on page 84
- Powering On and Powering Off the SRX210 Services Gateway on page 85
- SRX210 Services Gateway Basic Connectivity Overview

Chapter 15

Connecting the SRX210 Services Gateway to Management Devices

This chapter includes the following topics:

■ Connecting an SRX210 Services Gateway to the J-Web Interface on page 91

■ Connecting an SRX210 Services Gateway to the CLI Locally on page 95

■ Connecting an SRX210 Services Gateway to the CLI Remotely on page 96

■ Connecting the Modem at the SRX210 Services Gateway End on page 97

■ Connecting the Modem to the Console Port on the SRX210 Services Gateway on page 98

■ Connecting to the CLI at the User End for the SRX210 Services Gateway on page 99

Connecting an SRX210 Services Gateway to the J-Web Interface

If you plan to use the J-Web interface to configure the SRX210 Services Gateway, you must connect through one of the built-in Ethernet management ports.

When the services gateway is powered on for the first time, the system looks for a DHCP server. If it does not find one, the system assigns an IP address within the **192.168.1.0/24** subnetwork to any devices connected to the system.

To connect to the J-Web interface through any of the ports **ge-0/0/1** or **fe-0/0/2** to **fe-0/0/7** on the services gateway, see Figure 27 on page 92.

Figure 27: Connecting to the Ethernet Port on an SRX210 Services Gateway

Ethernet port

Ethernet port

RJ-45 cable

g031118
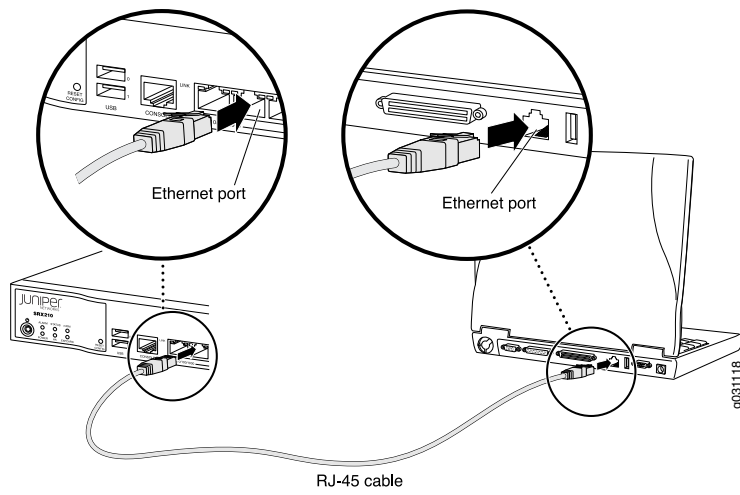
To connect to the Ethernet port:

1. From the management device you use to access the J-Web interface (such as a PC or a laptop), verify that the address of the port you connect to is set to one of the following values:

   ■ Ethernet address on the 192.168.1.0/24 subnetwork other than 192.168.1.1

   ■ Ethernet address from a DHCP server

2. Plug one end of the CAT-5e (Ethernet cable) into the Ethernet port on the management device.

3. Connect the other end of the Ethernet cable to any of the built-in Ethernet ports ge-0/0/1 or fe-0/0/2 to fe-0/0/7 on the services gateway.

4. Wait until the Status LED on the front panel of the services gateway turns solid green.

5. Turn on the power to the management device. The services gateway assigns an IP address to the management device within the 192.168.1.0/24 subnetwork if the management device is configured to use DHCP.

NOTE: After connecting the management device to the services gateway, the DHCP server process on the services gateway will assign an IP address automatically to the management device. Ensure that the management device acquires an IP address on the 192.168.1.0/24 subnetwork (other than 192.168.1.1) from the device.

6. From the management device, open a Web browser and enter the IP address 192.168.1.1 in the address field if the management device is configured using the DHCP.

7. Configure basic settings for your services gateway.

NOTE: You must manually configure the IP address for the management port you are using before you save your initial configuration. When you save the configuration for the first time, you will lose the connection to the services gateway if you have not manually configured the IP address. If you lose the connection through the management interface, you must connect through the Console port.

Related Topics
■ Performing Initial Software Configuration on the SRX210 Services Gateway Using the J-Web Interface on page 107

■ Connecting an SRX210 Services Gateway to the CLI Locally on page 95

■ SRX210 Services Gateway Software Configuration Overview on page 101

■ SRX210 Services Gateway Secure Web Access Overview on page 111

Connecting an SRX210 Services Gateway to the CLI Locally

If you plan to use the CLI to configure the SRX210 Services Gateway, you must connect through the console port, as shown in Figure 28 on page 95.

Figure 28: Connecting to the Console Port on an SRX210 Services Gateway
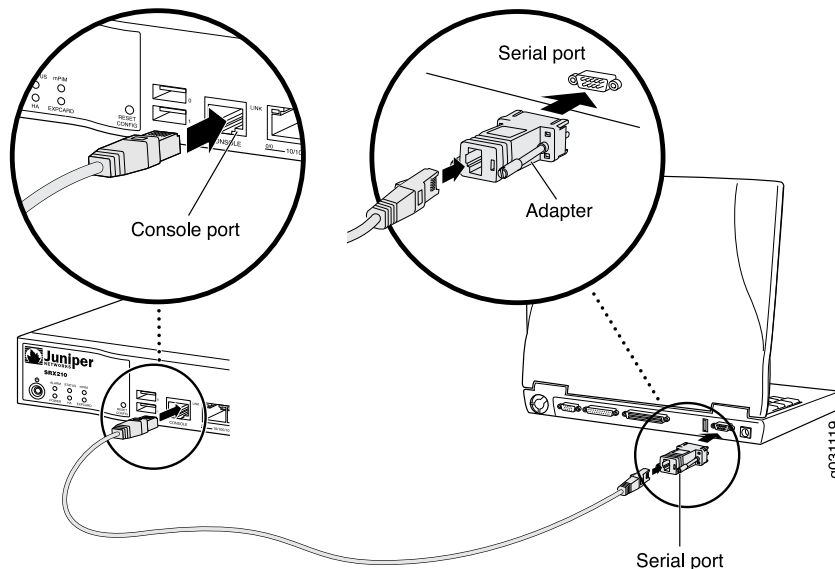
NOTE: Figure 28 on page 95 shows a connection to a local management device. A remote connection to the services gateway through a modem requires the cable and connector shown (provided in the services gateway accessory box), plus a DB-9 female to DB-25 male (or similar) adapter for your modem, which you must purchase separately.

To connect to the CLI using a local management device through the console port on the services gateway:

1. Turn off power to the services gateway.

2. Turn off power to the management device, such as a PC or laptop computer, that you are using to access the CLI.

3. Plug one end of the Ethernet cable supplied with your services gateway into the RJ-45 to DB-9 serial port adapter supplied with your services gateway (see Figure 28 on page 95).

4. Plug the RJ-45 to DB-9 serial port adapter into the serial port on the management device (see Figure 28 on page 95).

5. Connect the other end of the Ethernet cable to the console port on the services gateway (see Figure 28 on page 95).

6. Turn on the power to the management device.

7. Start your asynchronous terminal emulation application (such as Microsoft Windows HyperTerminal) and select the appropriate **COM** port to use (for example, **COM1**).

8. Configure the port settings shown in Table 34 on page 96.

Table 34: Port Settings when Connecting to Console Port

Port Settings	Value
Bits per second	9600
Data bits	8
Parity	None
Stop bits	1
Flow control	None

9. Power on the services gateway by pressing the Power button on the front panel.

10. Verify that the Power LED on the front panel turns green.

    The terminal emulation screen on your management device displays the startup sequence. When the services gateway has finished starting up, a login prompt appears.

11. Log in as the user **root**. No password is required at initial connection, but you must assign a root password before committing any configuration settings.

Related Topics
- Connecting an SRX210 Services Gateway to the CLI Remotely on page 96
- Performing Initial Software Configuration on the SRX210 Services Gateway Using the CLI on page 104
- Connecting an SRX210 Services Gateway to the J-Web Interface on page 91
- SRX210 Services Gateway Software Configuration Overview on page 101
- SRX210 Services Gateway Secure Web Access Overview on page 111

Connecting an SRX210 Services Gateway to the CLI Remotely

You can connect an SRX210 Services Gateway to the CLI from a remote location through two dial-up modems:

- A modem that is connected to the console port on the services gateway
- A second modem connected to a remote management device

The modem connection allows you to remotely perform the same console operations you can perform locally.

Related Topics ■ Connecting an SRX210 Services Gateway to the CLI Locally on page 95

■ Performing Initial Software Configuration on the SRX210 Services Gateway Using the CLI on page 104

■ Connecting an SRX210 Services Gateway to the J-Web Interface on page 91

■ SRX210 Services Gateway Software Configuration Overview on page 101

■ SRX210 Services Gateway Secure Web Access Overview on page 111

Connecting the Modem at the SRX210 Services Gateway End

i   **NOTE:** These instructions use Hayes-compatible modem commands to configure the modem. If your modem is not Hayes-compatible, refer to the documentation for your modem and enter the equivalent modem commands.

To configure the modem on the services gateway end:

1. Connect the modem to a PC or laptop computer.

2. Power on the modem.

3. From the PC or laptop computer, start your asynchronous terminal emulation application (such as Microsoft Windows HyperTerminal) and select the **COM** port to which the modem is connected (for example, **COM1**).

4. Configure the port settings shown in Table 35 on page 97.

Table 35: Port Settings to Configure the Modem on the Services Gateway End

Port Settings	Value
Bits per second	9600
Data bits	8
Parity	None
Stop bits	1
Flow control	None

5. In the HyperTerminal window, enter **AT**.

    For more information on the AT commands, see the *JUNOS Software Administration Guide.*

    An **OK** response verifies that the modem can communicate successfully with the **COM** port on the PC or laptop.

6. Configure the modem to answer a call on the first ring by entering **ATS0=1**.

7. Configure the modem to accept modem control DTR signals by entering **AT&D1**.

8. Disable flow control by entering **AT&K0**.

9. Save modem settings by entering **AT&W**.

Related Topics
- Connecting the Modem to the Console Port on the SRX210 Services Gateway on page 98

- Connecting to the CLI at the User End for the SRX210 Services Gateway on page 99

- SRX210 Services Gateway Software Configuration Overview on page 101

Connecting the Modem to the Console Port on the SRX210 Services Gateway

To connect the dial-up modem to the console port on the services gateway:

1. Turn off power to the services gateway.

2. Turn off power to the modem.

3. Plug one end of the Ethernet cable supplied with your services gateway into the console port on the services gateway.

4. Plug the other end of the CAT-5e (Ethernet cable) into the RJ-45 to DB-9 serial port adapter supplied with your services gateway.

5. Connect the serial port adapter to a separately purchased DB-9 female to DB-25 male adapter or other adapter appropriate for your modem.

6. Plug the modem adapter into the DB-25 connector on the modem.

7. Connect the modem to your telephone network.

8. Turn on the power to the modem.

9. Power on the services gateway by pressing the Power button on the front panel. Verify that the **Power** LED on the front panel turns green.

NOTE: Most modems have an RS-232 DB-25 connector. You must separately purchase an adapter to connect your modem to the RJ-45 to DB-9 adapter and the Ethernet cable supplied with the services gateway.

Related Topics
- Connecting the Modem at the SRX210 Services Gateway End on page 97

- Connecting to the CLI at the User End for the SRX210 Services Gateway on page 99

- SRX210 Services Gateway Software Configuration Overview on page 101

Connecting to the CLI at the User End for the SRX210 Services Gateway

To remotely connect to the CLI through a dial-up modem connected to the console port on the services gateway:

1. Connect a modem at your remote location to a management device such as a PC or laptop computer.

2. Start your asynchronous terminal emulation application (such as Microsoft Windows HyperTerminal) on the PC or laptop computer.

3. Select the **COM** port to which the modem is connected (for example, **COM1**).

4. Configure the port settings shown in Table 36 on page 99.

Table 36: Port Settings for Connecting CLI at User End

Port Setting	Value
Bits per second	9600
Data bits	8
Parity	None
Stop bits	1
Flow control	None

5. In the HyperTerminal window, enter **AT**.

   For more information on the AT commands, see the *JUNOS Software Administration Guide*.

   An **OK** response verifies that the modem can communicate successfully with the **COM** port on the PC or laptop.

6. Dial the modem that is connected to the console port on the services gateway by entering **ATDT** *remote-modem-number*. For example, if the number of the modem connected to the console port on the services gateway is 0013033033030, enter **ATDT 0013033033030**.

   The services gateway login prompt appears.

7. Log in as the user **root**. No password is required at initial connection, but you must assign a root password before committing any configuration settings.

Related Topics
- Connecting the Modem at the SRX210 Services Gateway End on page 97
- Connecting the Modem to the Console Port on the SRX210 Services Gateway on page 98
- SRX210 Services Gateway Software Configuration Overview on page 101

Chapter 16

Performing Initial Software Configuration on the SRX210 Services Gateway

This chapter includes the following topics:

- SRX210 Services Gateway Software Configuration Overview on page 101
- Performing Initial Software Configuration on the SRX210 Services Gateway Using the CLI on page 104
- Performing Initial Software Configuration on the SRX210 Services Gateway Using the J-Web Interface on page 107
- SRX210 Services Gateway Secure Web Access Overview on page 111

SRX210 Services Gateway Software Configuration Overview

This topic includes the following sections:

- Preparing SRX210 Services Gateway for Configuration on page 101
- Understanding Built-In Ethernet Ports on page 102
- Mapping the Chassis Cluster Ports on page 102
- Understanding Management Access on page 103

Preparing SRX210 Services Gateway for Configuration

When the SRX210 services gateway powers on, it tries to boot the JUNOS Software from the default storage media. If the device fails to boot from the default storage media, it tries to boot from the alternate storage media.

Table 37 on page 101 provides information on the storage media available on SRX210 services gateway.

Table 37: Storage Media on SRX210 Services Gateway

Storage Media	Type
Internal NAND flash	Default; always present
USB storage device	Alternate

NOTE: The SRX210 services gateway that ship with JUNOS Release 10.0 or later are formatted with dual-root partitions from the factory. SRX Series devices that are running JUNOS Software Release 9.6 or earlier can be formatted with dual-root partitions when they are upgraded to JUNOS Release 10.0 or later.

For more information on dual-root partitioning, see the *JUNOS Software Administration Guide for Security Devices*.

You configure the services gateway by issuing JUNOS command-line interface (CLI) commands.

Gather the following information before configuring the device:

- Device name to be used on the network

- Domain name the device will use

- IP address and prefix length information for the Ethernet interface

- IP address of a default router

- IP address of a DNS server

- Password for the root user

Understanding Built-In Ethernet Ports

Note the following points about the SRX210 Services Gateway management port:

- The SRX210 Services Gateway uses **ge-0/0/1** and **fe-0/0/2** to **fe-0/0/7** as a management ports to perform initial device setup. Before initial configuration, when the factory default configuration is active, the device attempts to perform autoinstallation by obtaining a device configuration through all of its connected interfaces.

- The services gateway acts as a DHCP client out of the built-in Ethernet ports. If the services gateway does not find a DHCP server within a few seconds, the device acts as a DHCP server and assigns an IP address as 192.168.1.1/24. With the device temporarily acting as a DHCP server, you can manually configure it with the J-Web interface.

- Any DHCP client host, for example, a PC or laptop computer, directly connected to any of **ge-0/0/1** or **fe-0/0/2** to **fe-0/0/7** ports receives an address on the 192.168.1.1/24 network.

Mapping the Chassis Cluster Ports

On the SRX210 Services Gateway, the **fxp1** port is not user-configurable when the services gateway is operating in chassis cluster mode.

The **fxp0** port is dedicated as the out-of-band management interface for each of the devices in the chassis cluster setup and the **fxp1** port is dedicated as the chassis-cluster control port.

Table 38 on page 103 shows the mapping of the chassis cluster ports.

Table 38: Mapping the Chassis Cluster Ports on an SRX210 Services Gateway

Ethernet Ports on SRX210 Services Gateway	Management Interface
fe-0/0/6	fxp0 (management port)
fe-0/0/7	fxp1 (control port)

JUNOS Software automatically creates the fxp0 and fxp1 interfaces on these ports when the SRX210 Services Gateway is operating in chassis cluster mode.

For more information, see the following guides:

■ *JUNOS Software Interfaces and Routing Configuration Guide*

■ *JUNOS Software Security Configuration Guide*

Understanding Management Access

Telnet allows you to connect to the services gateway and access the CLI to execute commands from a remote system. The Telnet CLI connections are not encrypted and therefore can be intercepted.

NOTE: Telnet access to the root user is prohibited. You must use more secure methods, such as SSH, to log in as **root**.

SSH provides the following features:

■ Allows you to connect to the device and access the CLI to execute commands from a remote system

■ Encrypts traffic so that it cannot be intercepted (unlike Telnet)

■ Can be configured so that connections are authenticated by a digital certificate

■ Uses public–private key technology for both connection and authentication

The SSH client software must be installed on the machine where the client application runs. If the SSH private key is encrypted (for greater security), the SSH client must be able to access the passphrase used to decrypt the key.

For information about obtaining SSH software, see http://www.ssh.com and http://www.openssh.com.

If you are using a JUNOScript server to configure and monitor devices, you can activate cleartext access on the device to allow unencrypted text to be sent directly over a Transmission Line Protocol (TCP) connection without using any additional protocol (such as SSH, SSL, or Telnet). For more information about the JUNOScript application programming interface (API), see the *JUNOScript API Guide*.

NOTE: Information sent in cleartext is not encrypted and therefore can be intercepted.

If the device is operating in a Common Criteria environment, see the *Secure Configuration Guide for Common Criteria and JUNOS-FIPS*.

Related Topics

- Connecting an SRX210 Services Gateway to the J-Web Interface on page 91
- Connecting an SRX210 Services Gateway to the CLI Locally on page 95
- Connecting an SRX210 Services Gateway to the CLI Remotely on page 96
- Performing Initial Software Configuration on the SRX210 Services Gateway Using the CLI on page 104
- Performing Initial Software Configuration on the SRX210 Services Gateway Using the J-Web Interface on page 107
- SRX210 Services Gateway Secure Web Access Overview on page 111

Performing Initial Software Configuration on the SRX210 Services Gateway Using the CLI

This procedure connects the device to the network but does not enable it to forward traffic. For complete information about enabling the device to forward traffic, including examples, see the appropriate JUNOS Software configuration guides.

To configure the software:

1. Verify that the device is powered on.

2. Log in as the root user. There is no password.

3. Start the CLI.

   root# **cli**
   root@>

4. Enter configuration mode.

   configure
   [edit]
   root@#

5. Set the root authentication password by entering a cleartext password, an encrypted password, or an SSH public key string (DSA or RSA).

   [edit]
   root@# **set system root-authentication plain-text-password**
   New password: *password*
   Retype new password: *password*

6. Configure an administrator account on the device.

   [edit]
   root@# **set system login user admin class super-user authentication**
     plain-text-password

7. Commit the configuration to activate it on the device.

   [edit]
   root@# **commit**

8. Log in as the administrative user you configured in Step 6.

9. Configure the name of the device. If the name includes spaces, enclose the name
   in quotation marks (" ").

   configure
   [edit]
   admin@# **set system host-name** *host-name*

10. Configure the traffic interface.

    [edit]
    admin@# **set interfaces ge-0/0/1 unit 0 family inet address** *address/prefix-length*

11. Configure the default route.

    [edit]
    admin@# **set routing-options static route 0.0.0.0/0 next-hop** *gateway*

12. Configure basic security zones and bind them to traffic interfaces.

    [edit]
    admin@# **set security zones security-zone untrust interfaces ge-0/0/1**

13. Configure basic security policies.

    [edit]
    admin@# **set security policies from-zone trust to-zone untrust policy** *policy-name*
      match source-address any destination-address any application any
    root@# **set security policies from-zone trust to-zone untrust policy** *policy-name*
      then permit

14. Create a NAT rule for source translation of all Internet bound traffic.

    [edit]
    admin@# **set security nat source rule-set interface-nat from zone trust**
    admin@# **set security nat source rule-set interface-nat to zone untrust**
    admin@# **set security nat source rule-set interface-nat rule rule1 match**
      source-address 0.0.0.0/0 destination-address 0.0.0.0/0
    admin@# **set security nat source rule-set interface-nat rule rule1 then source-nat**
      interface

15. Check the configuration for validity.

    ```
    [edit]
    admin@# commit check
    configuration check succeeds
    ```

16. Commit the configuration to activate it on the device.

    ```
    [edit]
    admin@# commit
    commit complete
    ```

17. Optionally, display the configuration to verify that it is correct.

    ```
    [edit]
    user@host# show
    system {
        host-name devicea;
        domain-name lab.device.net;
        domain-search [ lab.device.net device.net ];
        backup-device 192.168.2.44;
        time-zone America/Los_Angeles;
        root-authentication {
            ssh-rsa "ssh-rsa AAAAB3Nza...D9Y2gXF9ac==root@devicea.lab.device.net";
        }
        name-server {
            10.148.2.32;
        }
        services {
        }
        ntp {
            server 10.148.2.21;
        }
    }
    interfaces {
        ge-0/0/0 {
            unit 0 {
                family inet {
                    address 192.168.1.1/24;
                }
            }
        }
        lo0 {
            unit 0 {
                family inet {
                    address 172.16.1.24/32;
                }
            }
        }
    }
    ```

18. Commit the configuration to activate it on the device.

    ```
    [edit]
    admin@# commit
    ```

19. Optionally, configure additional properties by adding the necessary configuration statements. Then commit the changes to activate them on the device.

    [edit]
    admin@host# **commit**

20. When you have finished configuring the device, exit configuration mode.

    [edit]
    admin@host# **exit**
    admin@host>

Related Topics
- Connecting an SRX210 Services Gateway to the CLI Locally on page 95
- Connecting an SRX210 Services Gateway to the CLI Remotely on page 96
- SRX210 Services Gateway Software Configuration Overview on page 101
- Performing Initial Software Configuration on the SRX210 Services Gateway Using the J-Web Interface on page 107
- SRX210 Services Gateway Secure Web Access Overview on page 111

Performing Initial Software Configuration on the SRX210 Services Gateway Using the J-Web Interface

This topic includes the following sections:

- Establishing Basic Connectivity on page 107
- Configuring Basic System Properties on page 108

Establishing Basic Connectivity

To establish basic connectivity:

1. Connect an Ethernet cable from any of the **ge-0/0/1** or **fe-0/0/2** to **fe-0/0/7** ports to the Ethernet port on the management device (workstation or laptop).

2. Connect the power cable to the device and a power source. (We recommend using a surge protector.) Note the following indications:

   - Power LED (solid green): The device is receiving power.
   - Status LED (solid green): The device is operating normally.

i **NOTE:** The services gateway functions as a DHCP server and will assign an IP address to the management device.

3. Ensure that the management device acquires an IP address on the 192.168.1.0/24 subnetwork (other than 192.168.1.1) from the device.

NOTE: If an IP address is not assigned to the management device, manually configure an IP address in the 192.168.1.0/24 subnetwork. Do not assign the 192.168.1.1 IP address to the management device, as this IP address is assigned to the device.

4. Access the J-Web interface:

   a. Launch a Web browser from the management device.

   b. Enter 192.168.1.1 in the Address box.

   c. Specify the default user name as root. Do not enter any value in the Password box.

   d. Press Enter. The J-Web Initial Setup page is displayed.

5. Configure the basic settings such as Host Name, Domain Name, Root Password, and IP Address for your services gateway. Ensure that you have configured the IP address, root authentication, and default gateway before you apply the configuration.

NOTE: All network and management access settings are optional.

6. Click **Apply** to apply the configuration.

NOTE: After configuring the basic settings, the Web session may timeout. Refresh or relaunch the page if the applied configuration page is not displayed .

Configuring Basic System Properties

Table 39 on page 108 through Table 41 on page 110 provide the summary of configuration details for initial setup.

Table 39: Basic Configuration Summary (Device Identification)

Field	Function	Your Action
Host Name	Defines the hostname of the services gateway.	Type the hostname.
Domain Name	Defines the network or subnetwork that the services gateway belongs to.	Type the domain name.

Table 39: Basic Configuration Summary (Device Identification) *(continued)*

Field	Function	Your Action
Root Password (required)	Sets the password that user **root** can use to log in to the services gateway.	Type a plaintext password that the system encrypts. **NOTE:** After a root password has been defined, it is required when you log in to the J-Web user interface or the CLI.
Verify Root Password (required)	Verifies the root password has been typed correctly.	Retype the password.
DNS Name Servers	Specifies a DNS server that the services gateway can use to resolve hostnames into addresses.	Add an IP address by selecting it in the box to the left of the Add button, then clicking **Add**. Delete an IP address by clicking it in the box above the Add button, then clicking **Remove**.
Domain Search	Adds each domain name that includes the services gateway to the configuration so that each domain is included in a DNS search.	Add a domain name by typing it in the box to the left of the Add button, then clicking **Add**. Delete a domain name by , clicking it in the box above the Add button, then clicking **Remove**.

Table 40: Basic Configuration Summary (Management Access)

Field	Function	Your Action
Default Gateway	Defines a default gateway through which to direct packets addressed to networks not explicitly listed in the routing table.	Type a 32-bit IP address in dotted decimal notation.
Loopback Address	Defines a reserved IP address that is always available on the services gateway. If no address is entered, this address is set to **127.0.0.1/32**.	Type a 32-bit IP address and prefix length in dotted decimal notation.
Allow Telnet Access	Allows remote access to the services gateway using Telnet.	Enable Telnet access by selecting the box.
Allow JUNOScript over Clear-Text Access	Allows JUNOScript to access the services gateway using a protocol for sending unencrypted text over a TCP connection.	Enable JUNOScript access over cleartext by selecting the box.
Allow SSH Access	Allows remote access to the services gateway using SSH.	Enable SSH access by selecting the box.

Table 41: Basic Configuration Summary (Date and Time)

Field	Function	Your Action
Date and Time		
Time Zone	Identifies the time zone in which the services gateway is located.	From the list, select the appropriate time zone.
NTP Servers	Specifies an NTP server that the services gateway can reach to synchronize the system time.	Add an IP address by clicking **Add** and entering IP address and then clicking **OK**. Delete an IP address by clicking it in the box and then clicking **Delete**.
Current System Time	Synchronizes the system time with the NTP server or allows you to manually set the system time and date.	■ Set the time immediately using the NTP server; select **NTP Servers**. The services gateway sends a request to the NTP server and synchronizes the system time. **NOTE:** If you are configuring other settings on this page, the services gateway also synchronizes the system time using the NTP server when you click **OK**. ■ Set the time manually by selecting the **Manual** button. A window allows you to select the current date and time from lists.

To configure basic system properties:

1. In the J-Web interface, select **Configure > System properties** and select the required tab and proceed with configuring the other settings. See Table 39 on page 108 through Table 41 on page 110 for details.

2. Click one of the following buttons:

   ■ Click **OK** to save changes.

   ■ Click **Cancel** to cancel your entries and return to the previous page.

   ■ Click **Commit** to apply the configuration and other pending changes (if any) and click **Discard** to discard pending changes.

3. Configure an interface as follows:

   a. In the J-Web interface, select **Configure > Interfaces**

      The Interfaces page appears and lists the network interfaces present on the services gateway.

   b. Under the Interface Name column, click the interface you want to configure (for example ge-0/0/0).

   c. Under **Logical Interfaces**, click **Add**.

   d. Under **IPv4 Addresses and Prefixes**, click **Add**.

e. In the IPv4 Address and Prefix fields, enter an IP address and a subnet mask

f. Click **OK**. The configured IP address is included in the Address Prefix column.

4. Configure the default route as follows

a. In the J-Web interface, select **Configure > Routing > Static routing**

b. In the Static Routing page, click **Add**.

c. Add an IP address for Route and Next-hop.

d. Click **OK**. The configured IP address is included in the Static Routing page.

5. Configure basic security zones and bind them to traffic interfaces.

a. In the J-Web interface, under the Configure tab, navigate to **Security > Zones**

b. Under Security Zone, click **Add**.

c. Enter a name for the zone in the Zone Name field.

d. Scroll down to the Interfaces Configuration panel on the page to add an interface to a specific zone.

e. Click **OK** to save the configuration.

6. Configure basic security policies.

a. In the J-Web interface, under the Configure tab, navigate to **Security > Policy**.

b. In the Security Policy page, click **Add**.

c. Enter a name for the policy and select the source and destination zones.

d. Enter a source address, destination address, and an application.

e. Select Policy Action as Permit, or Deny, or Reject.

f. Click **OK** to save the configuration.

NOTE: Click **Commit** to apply the configuration and other pending changes (if any) and click **Discard** to discard pending changes.

For more instructions on managing users and operations, monitoring network performance, upgrading software, and diagnosing common problems on an SRX210 Series Services Gateways, see the *JUNOS Software Administration Guide*.

SRX210 Services Gateway Secure Web Access Overview

You can manage a services gateway remotely through the J-Web interface. To communicate with the services gateway, the J-Web interface uses Hypertext Transfer Protocol (HTTP). HTTP allows easy Web access but no encryption. The data that is

transmitted between the Web browser and the services gateway by means of HTTP is vulnerable to interception and attack. To enable secure Web access, the services gateway supports HTTP over Secure Sockets Layer (HTTPS). You can enable HTTP or HTTPS access on specific interfaces and ports as needed.

The services gateway uses the SSL protocol to provide secure management of services gateways through the J-Web. SSL uses public-private key technology that requires a paired private key and an authentication certificate for providing the SSL service. SSL encrypts communication between your device and the Web browser with a session key negotiated by the SSL server certificate.

An SSL certificate includes identifying information such as a public key and a signature made by a certificate authority (CA). When you access the services gateway through HTTPS, an SSL handshake authenticates the server and the client and begins a secure session. If the information does not match or if the certificate has expired, your access to the services gateway through HTTPS is restricted.

Without SSL encryption, communication between your services gateway and the browser is sent in the open and can be intercepted. We recommend that you enable HTTPS access on your WAN interfaces.

For more information about configuring secure Web access, see the *JUNOS Software Administration Guide.*

Related Topics
- SRX210 Services Gateway Software Configuration Overview on page 101
- Performing Initial Software Configuration on the SRX210 Services Gateway Using the CLI on page 104
- Performing Initial Software Configuration on the SRX210 Services Gateway Using the J-Web Interface on page 107

Part 3

Maintaining and Monitoring the SRX210 Services Gateway Hardware

- Maintaining the SRX210 Services Gateway Hardware Components on page 115
- Monitoring the SRX210 Services Gateway on page 117

Chapter 17
Maintaining the SRX210 Services Gateway Hardware Components

This chapter describes how to maintain the hardware components of the SRX210 Services Gateway. This chapter includes the following topic:

■ Maintaining the SRX210 Services Gateway Hardware Components on page 115

Maintaining the SRX210 Services Gateway Hardware Components

Table 42 on page 115 describes the common tasks to maintain the hardware components of the services gateway.

Table 42: Maintenance Procedures for the Services Gateway Hardware Components

Maintenance Procedures	Description
Routine Maintenance Procedures	To maintain optimum performance of the services gateway, you should regularly perform the following preventive maintenance procedures: ■ Inspect the installation site for moisture, loose wires or cables, and excessive dust. ■ Make sure that airflow is unobstructed around the device and into the air intake vents. ■ Check the Status LED on the front panel of the device and on the Mini-Physical Interface Module (Mini-PIM) you are using.
Maintaining the Cooling System	The services gateway cooling system works to maintain an optimal temperature for the device. If the fan controller fails, the device temperature will exceed the maximum working temperature and the device will fail. Ensure that you maintain the recommended clearances behind the device to enable the cooling system to function optimally.
Maintaining the Power Supply	To maintain the power supply on the services gateway: ■ Make sure that the power and grounding cables are arranged so that they do not obstruct access to other device components. ■ Periodically inspect the site to ensure that the grounding and power cables connected to the device are securely in place and that there is no moisture accumulating near the device. **CAUTION:** We recommend using a surge protector for the power connection.

Related Topics
- Connecting the SRX210 Services Gateway to the Power Supply on page 81
- Clearance Requirements for Airflow and Hardware Maintenance of the SRX210 Services Gateway on page 54
- Site Preparation Checklist for the SRX210 Services Gateway on page 49

Chapter 18

Monitoring the SRX210 Services Gateway

This chapter describes how to monitor the SRX210 Services Gateway hardware components. If you encounter software problems, or problems with hardware components not discussed here, contact the Juniper Networks Technical Assistance Center (JTAC). This chapter includes the following topics:

■   Monitoring Hardware Components on the SRX210 Services Gateway on page 117

■   Resetting the Configuration File When the SRX210 Services Gateway Is Inaccessible on page 126

■   Juniper Networks Technical Assistance Center on page 128

Monitoring Hardware Components on the SRX210 Services Gateway

This topic includes the following sections:

■   Monitoring the SRX210 Services Gateway Chassis Using the CLI on page 117

■   Monitoring the SRX210 Services Gateway Components Using LEDs on page 120

■   Monitoring the SRX210 Services Gateway Using Chassis Alarm Conditions on page 122

■   Monitoring the SRX210 Services Gateway Power System on page 125

Monitoring the SRX210 Services Gateway Chassis Using the CLI

You can monitor alarms to troubleshoot hardware problems on a services gateway. The chassis properties include the status of active chassis alarms on the device, environment measurements, and the status of Mini-PIMs on the device.

To view these chassis properties, select **Monitor** in the J-Web interface, or enter the following CLI show commands:

■   **show chassis hardware**

■   **show chassis hardware detail**

■   **show chassis environment**

■   **show chassis fpc**

■   **show chassis alarms**

Examples:

The following examples provide the sample output of commands:

show chassis hardware

■   For the SRX210 Services Gateway

user@host > **show chassis hardware**

```
Item                    Version  Part number  Serial number      Description

Chassis                                                          SRX210b

Routing Engine      REV X0    750-021778    000000PS2627
RE-SRX210-LOWMEM

FPC 0                                                            FPC

PIC 0                                                            2x GE, 6x
 FE, 1x 3G

Power Supply 0
```

■   For the SRX210 Services Gateway with Integrated Convergence Services

user@host > **show chassis hardware**

```
Item              Version  Part number  Serial number   Description

Chassis

Routing Engine   REV 01   750-021778   VG8859          RE-SRX210-VOICE

FPC 0                                                  FPC

PIC 0                                                  2x GE, 6x FE, 1x
3G, 2xFXS, 1xFXO


Power Supply 0
```

show chassis hardware detail

user@host > **show chassis hardware detail**

```
Hardware inventory:
Item              Version  Part number  Serial number      Description
Chassis                                                    SRX210b
Routing Engine    REV X0   750-021778   000000PS2631       RE-SRX210-LOWMEM
  da0      999 MB  ST72682                                 Nand Flash
  usb0 (addr 1)   DWC OTG root hub 0     vendor 0x0000     uhub0
  usb0 (addr 2)   product 0x6254 25172  vendor 0x058f      uhub1
  usb0 (addr 3)   ST72682  High Speed Mode 64218 STMicroelectronics umass0
FPC 0                                                      FPC
  PIC 0                                                    2x GE, 6x FE, 1x 3G
Power Supply 0
```

NOTE: The values given in the **usb0** rows provide information for USB level debugging. This information is about USB hub topology.

show chassis environment

user@host > **show chassis environment**

```
Class Item                        Status     Measurement

Temp  Routing Engine              OK         33 degrees C / 91 degrees F

Fans  SRX210 Chassis fan          OK         Spinning at intermediate-speed

Power Power Supply 0              OK
```

show chassis fpc

user@host > **show chassis fpc**

```
     Temp  CPU Utilization (%)   Memory    Utilization (%)

Slot State          (C)  Total  Interrupt      DRAM (MB) Heap      Buffer

  0  Online         ------------------- CPU less FPC --------------------

  1  Online         ------------------- CPU less FPC --------------------
```

show chassis alarms

user@host > **show chassis alarms**

```
Alarm time     Class   Description
2009-05-11 10:47:47 UTC Major   SRX210 Chassis Fan Failure
```

Related Topics
- Monitoring the SRX210 Services Gateway Components Using LEDs on page 120
- Monitoring the SRX210 Services Gateway Using Chassis Alarm Conditions on page 122
- Monitoring the SRX210 Services Gateway Power System on page 125
- Maintaining the SRX210 Services Gateway Hardware Components on page 115
- Juniper Networks Technical Assistance Center on page 128

Monitoring the SRX210 Services Gateway Components Using LEDs

Table 43: Component LEDs on the Services Gateway

LED	State	Meaning	Possible Causes and Corrective Actions
Status LED	Green	Indicates that the device is functioning normally.	Normal condition. No action is required.
	Amber	■ The device is starting up. ■ The Reset Config button is pressed.	Normal condition. No action is required.
	Red	An error is detected in the device.	Contact the Juniper Networks Technical Assistance Center (JTAC). See "Juniper Networks Technical Assistance Center" on page 128.
Alarm LED	Red	The device detects a major alarm.	A major alarm indicates a critical situation on the gateway that requires immediate action. See "Monitoring the SRX210 Services Gateway Using Chassis Alarm Conditions" on page 122.
	Amber	The device detects a minor alarm.	A minor alarm requires monitoring or maintenance. If left unchecked, it might cause an interruption in service or degradation in performance. See "Monitoring the SRX210 Services Gateway Using Chassis Alarm Conditions" on page 122.
	Off	The device is starting up. **NOTE:** When the system is up and running, if the Alarm LED is off, it indicates that no alarms are present on the device.	Normal condition. No action is required.

Table 43: Component LEDs on the Services Gateway *(continued)*

LED	State	Meaning	Possible Causes and Corrective Actions
Power LED	Green	The device is receiving power and is functioning normally.	Normal condition. No action is required.
	Amber	The Power button has been pressed and quickly released.	Normal condition. No action is required.
	Off	The device is not receiving power.	Normal condition if the services gateway is switched off. No action is required. If you have not powered off the services gateway, verify that the AC power cord from the power source to the device is not damaged, the socket is in working condition, and the device has an AC input voltage between 110 and 240 VAC. See "Monitoring the SRX210 Services Gateway Power System" on page 125.
HA LED	Off		The device is not part of the chassis cluster setup.
Mini-PIM LED	Green	The Mini-PIM is present and detected by the device.	Normal condition. No action is required.
	Off	The Mini-PIM is not present or is not detected by the device.	See "Monitoring the SRX210 Services Gateway Using Chassis Alarm Conditions" on page 122.

Table 43: Component LEDs on the Services Gateway *(continued)*

LED	State	Meaning	Possible Causes and Corrective Actions
Voice Interface LED	Off	The port is inactive.	Normal condition. No action is required.
	Green (Steady)	The port is active and functioning normally.	Normal condition. No action is required.
	Amber	The port is active and not ready for data communication.	Normal condition. No action is required.
	Green (Blinking)	The port is active and data communication is taking place.	Normal condition. No action is required.
	Red (blinking)	The port is initializing. **NOTE:** The Voice Interface port LED glows red (blinking) while initializing. If there is an error, the LED remains red; otherwise, the LED changes to green.	Normal condition. No action is required.
	Red (steady)	The Port has detected a hardware initialization failure.	Contact the Juniper Networks Technical Assistance Center (JTAC). See "Juniper Networks Technical Assistance Center" on page 128.

Related Topics

- Monitoring the SRX210 Services Gateway Chassis Using the CLI on page 117

- Monitoring the SRX210 Services Gateway Using Chassis Alarm Conditions on page 122

- Monitoring the SRX210 Services Gateway Power System on page 125

- Using the Reset Config Button on the SRX210 Services Gateway on page 126

- Changing the Reset Config Button Behavior on the SRX210 Services Gateway on page 127

- Juniper Networks Technical Assistance Center on page 128

Monitoring the SRX210 Services Gateway Using Chassis Alarm Conditions

When the services gateway detects an alarm condition, the alarm LED on the front panel turns red or amber as appropriate.

To view a more detailed description of the cause of the alarm , issue the show chassis alarms CLI command.

For more information on the show chassis alarms command, see the *JUNOS Software Administration Guide*.

Table 44 on page 123 describes alarms that can occur for an SRX210 Services Gateway chassis component.

Table 44: SRX210 Services Gateway Chassis Alarm Conditions and Corrective Actions

Component	Alarm Condition	Action	Alarm Severity
Boot media	The services gateway boots from an alternate boot device.	■ If the internal flash fails at startup, the services gateway automatically boots from the alternative boot device (USB storage device). **NOTE:** If you configured your services gateway to boot from an alternative boot device, ignore this alarm condition. ■ Reformat the internal flash and install a bootable image. (See the *JUNOS Software Administration Guide*.) ■ If you did not configure the services gateway to boot from an alternative boot device, contact Juniper Networks Technical Assistance Center (JTAC). See "Juniper Networks Technical Assistance Center" on page 128.	Amber (minor)
Mini-Physical Interface Module (Mini-PIM)	A Mini-PIM has failed.	■ Contact the Juniper Networks Technical Assistance Center (JTAC). See "Juniper Networks Technical Assistance Center" on page 128. ■ If you must replace the failed Mini-PIM, see the *SRX Series Services Gateways for the Branch Physical Interface Modules Hardware Guide* for information about replacing the Mini-PIMs.	Red (major)

Table 44: SRX210 Services Gateway Chassis Alarm Conditions and Corrective Actions *(continued)*

Component	Alarm Condition	Action	Alarm Severity
Hardware components on the services gateway	The services gateway chassis temperature or chassis is too warm.	■ Check the room temperature. See "SRX210 Services Gateway Specifications" on page 7. ■ Check the air flow. See "General Site Guidelines for Installing the SRX210 Services Gateway" on page 51. ■ Check the fans. See "SRX210 Services Gateway Cooling System" on page 24. If you must replace a fan, contact Juniper Networks Technical Assistance Center (JTAC). See "Juniper Networks Technical Assistance Center" on page 128.	Amber (minor)
	The services gateway fan has failed.	Use the CLI command **show chassis environment** to determine whether the fan is functioning normally. If the fan has failed, contact JTAC. See "Juniper Networks Technical Assistance Center" on page 128.	Red (major)
	The services gateway temperature is too high, either because of an internal overheating condition or because the maximum recommended room temperature has been exceeded.	The services gateway shuts down automatically in four minutes.	Red (major)

Related Topics

- Monitoring the SRX210 Services Gateway Chassis Using the CLI on page 117

- Monitoring the SRX210 Services Gateway Components Using LEDs on page 120

- Monitoring the SRX210 Services Gateway Power System on page 125

- Using the Reset Config Button on the SRX210 Services Gateway on page 126

- Changing the Reset Config Button Behavior on the SRX210 Services Gateway on page 127

- Juniper Networks Technical Assistance Center on page 128

Monitoring the SRX210 Services Gateway Power System

The LEDs on the services gateway enable you to determine the performance and operation. The Power LED, located on the front panel of the services gateway, indicates the different settings with respect to the power system.

Table 45 on page 125 describes different Power LED status settings and their corrective actions.

Table 45: Services Gateway Power LED Status

LED Status	Meaning	Possible Cause and Corrective Action
Green	The device is receiving power, and the internal power supply is functional.	Normal indication. No action is required.
Amber	The Power button has been pressed and quickly released. The device is shutting down or starting up.	Normal indication. No action is required.
Off	The device is not receiving power.	■ Verify that the AC power cord from the power source to the device is not damaged. If the insulation is cracked or broken, immediately replace the cord or cable. ■ Ensure that the socket you plug in is in working condition. ■ Ensure the device has an AC input voltage between 110 and 240 VAC. ■ If you cannot determine the cause of the problem or need additional assistance, contact the Juniper Networks Technical Assistance Center (JTAC). See "Juniper Networks Technical Assistance Center" on page 128.

Related Topics

- Monitoring the SRX210 Services Gateway Chassis Using the CLI on page 117
- Monitoring the SRX210 Services Gateway Components Using LEDs on page 120
- Monitoring the SRX210 Services Gateway Using Chassis Alarm Conditions on page 122
- Using the Reset Config Button on the SRX210 Services Gateway on page 126

- Changing the Reset Config Button Behavior on the SRX210 Services Gateway on page 127

- Juniper Networks Technical Assistance Center on page 128

Resetting the Configuration File When the SRX210 Services Gateway Is Inaccessible

You can use the SRX210 Services Gateway's Reset Config button to restore the device's configuration file when the current one is faulty or fails. You can also change the default behavior of the Reset Config button.

This topic includes the following sections:

- Using the Reset Config Button on the SRX210 Services Gateway on page 126
- Changing the Reset Config Button Behavior on the SRX210 Services Gateway on page 127

Using the Reset Config Button on the SRX210 Services Gateway

If a configuration fails or denies management access to the services gateway, you can use the Reset Config button to restore the device to the factory default configuration or a rescue configuration. For example, if someone inadvertently commits a configuration that denies management access to a services gateway, you can delete the invalid configuration and replace it with a rescue configuration by pressing the Reset Config button.

NOTE: The Reset Config button is recessed to prevent it from being pressed accidentally.

The rescue configuration is a previously committed, valid configuration. You must have previously set the rescue configuration through the J-Web interface or the CLI.

To press the Reset Config button, insert a small probe (such as a straightened paper clip) into the pinhole on the front panel.

- By default, pressing and quickly releasing the Reset Config button loads and commits the rescue configuration through the J-Web interface or the CLI. The Status LED glows amber during this time. For details, see the *JUNOS CLI User Guide*.

- By default, pressing and holding the Reset Config button for 15 seconds or more—until the Status LED glows amber—deletes all configurations on the device, including the backup configurations and rescue configuration, and loads and commits the factory configuration. For details about factory default settings, see the *JUNOS Software Administration Guide*.

Related Topics
- Changing the Reset Config Button Behavior on the SRX210 Services Gateway on page 127
- Monitoring the SRX210 Services Gateway Chassis Using the CLI on page 117
- Monitoring the SRX210 Services Gateway Components Using LEDs on page 120
- Monitoring the SRX210 Services Gateway Using Chassis Alarm Conditions on page 122
- Monitoring the SRX210 Services Gateway Power System on page 125
- Juniper Networks Technical Assistance Center on page 128

Changing the Reset Config Button Behavior on the SRX210 Services Gateway

You can change the default operation of the Reset Config button by limiting how the button resets the services gateway:

- To prevent the Reset Config button from setting the device to the factory default configuration and deleting all other configurations:

  admin@host# **set chassis config-button no-clear**

  You can still press and quickly release the button to reset it to the rescue configuration.

- To prevent the Reset Config button from setting the device to the rescue configuration:

  admin@host# **set chassis config-button no-rescue**

  You can still press and hold the button for 15 seconds or more to reset the gateway to the factory defaults.

- To disable the button and prevent the device from resetting to either configuration:

  admin@host# **set chassis config-button no-clear no-rescue**

The **no-rescue** option prevents the Reset Config button from loading the rescue configuration. The **no-clear** option prevents the Reset Config button from deleting all configurations on the services gateway.

To return the function of the Reset Config button to its default behavior, remove the **config-button** statement from the device configuration.

Related Topics
- Using the Reset Config Button on the SRX210 Services Gateway on page 126
- Monitoring the SRX210 Services Gateway Chassis Using the CLI on page 117
- Monitoring the SRX210 Services Gateway Components Using LEDs on page 120
- Monitoring the SRX210 Services Gateway Using Chassis Alarm Conditions on page 122

- Monitoring the SRX210 Services Gateway Power System on page 125
- Juniper Networks Technical Assistance Center on page 128

Juniper Networks Technical Assistance Center

If you need assistance while troubleshooting a services gateway, open a support case using the Case Manager link at http://www.juniper.net/support/, or call 1-888-314-JTAC (within the United States) or 1-408-745-9500 (from outside the United States).

Part 4

Appendixes

- ■ Safety and Regulatory Compliance Information on page 131
- ■ SRX210 Services Gateway Power Guidelines, Requirements, and Specifications on page 157
- ■ SRX210 Services Gateway Interface Cable Specifications and Connector Pinouts on page 161
- ■ Contacting Customer Support and Returning the SRX210 Services Gateway Hardware on page 167

Appendix A

Safety and Regulatory Compliance Information

This appendix includes the following topics:

- SRX210 Services Gateway Definition of Safety Warning Levels on page 131
- SRX210 Services Gateway General Safety Guidelines and Warnings on page 133
- SRX210 Services Gateway Fire Safety Requirements on page 137
- SRX210 Services Gateway Installation Safety Guidelines and Warnings on page 138
- SRX210 Services Gateway Laser and LED Safety Guidelines and Warnings on page 142
- SRX210 Services Gateway Maintenance and Operational Safety Guidelines and Warnings on page 145
- SRX210 Services Gateway Electrical Safety Guidelines and Warnings on page 150
- SRX210 Services Gateway Agency Approvals on page 151
- SRX210 Services Gateway Compliance Statements for EMC Requirements on page 152
- SRX210 Services Gateway Compliance Statements for Environmental Requirements on page 154
- SRX210 Services Gateway Compliance Statements for Acoustic Noise on page 154

SRX210 Services Gateway Definition of Safety Warning Levels

This topic defines the following three levels of safety warnings used in Juniper Networks technical publications:

NOTE: You might find this information helpful in a particular situation or might otherwise overlook it.

CAUTION: You need to observe the specified guidelines to avoid minor injury or discomfort to you or severe damage to the services gateway.

WARNING: This symbol means danger. You are in a situation that could cause bodily injury. Before you work on any equipment, be aware of the hazards involved with electrical circuitry and be familiar with standard practices for preventing accidents.

Waarschuwing Dit waarschuwingssymbool betekent gevaar. U verkeert in een situatie die lichamelijk letsel kan veroorzaken. Voordat u aan enige apparatuur gaat werken, dient u zich bewust te zijn van de bij elektrische schakelingen betrokken risico's en dient u op de hoogte te zijn van standaard maatregelen om ongelukken te voorkomen.

Varoitus Tämä varoitusmerkki merkitsee vaaraa. Olet tilanteessa, joka voi johtaa ruumiinvammaan. Ennen kuin työskentelet minkään laitteiston parissa, ota selvää sähkökytkentöihin liittyvistä vaaroista ja tavanomaisista onnettomuuksien ehkäisykeinoista.

Attention Ce symbole d'avertissement indique un danger. Vous vous trouvez dans une situation pouvant causer des blessures ou des dommages corporels. Avant de travailler sur un équipement, soyez conscient des dangers posés par les circuits électriques et familiarisez-vous avec les procédures couramment utilisées pour éviter les accidents.

Warnung Dieses Warnsymbol bedeutet Gefahr. Sie befinden sich in einer Situation, die zu einer Körperverletzung führen könnte. Bevor Sie mit der Arbeit an irgendeinem Gerät beginnen, seien Sie sich der mit elektrischen Stromkreisen verbundenen Gefahren und der Standardpraktiken zur Vermeidung von Unfällen bewußt.

Avvertenza Questo simbolo di avvertenza indica un pericolo. La situazione potrebbe causare infortuni alle persone. Prima di lavorare su qualsiasi apparecchiatura, occorre conoscere i pericoli relativi ai circuiti elettrici ed essere al corrente delle pratiche standard per la prevenzione di incidenti.

Advarsel Dette varselsymbolet betyr fare. Du befinner deg i en situasjon som kan føre til personskade. Før du utfører arbeid på utstyr, må du vare oppmerksom på de faremomentene som elektriske kretser innebærer, samt gjøre deg kjent med vanlig praksis når det gjelder å unngå ulykker.

Aviso Este símbolo de aviso indica perigo. Encontra-se numa situação que lhe poderá causar danos físicos. Antes de começar a trabalhar com qualquer equipamento, familiarize-se com os perigos relacionados com circuitos eléctricos, e com quaisquer práticas comuns que possam prevenir possíveis acidentes.

¡Atención! Este símbolo de aviso significa peligro. Existe riesgo para su integridad física. Antes de manipular cualquier equipo, considerar los riesgos que entraña la corriente eléctrica y familiarizarse con los procedimientos estándar de prevención de accidentes.

Varning! Denna varningssymbol signalerar fara. Du befinner dig i en situation som kan leda till personskada. Innan du utför arbete på någon utrustning måste du vara medveten om farorna med elkretsar och känna till vanligt förfarande för att förebygga skador.

SRX210 Services Gateway General Safety Guidelines and Warnings

General Safety Guidelines and Warnings

The following guidelines help ensure your safety and protect the services gateway from damage. The list of guidelines might not address all potentially hazardous situations in your working environment, so be alert and exercise good judgment at all times.

- Perform only the procedures explicitly described in these topics. Ensure that only authorized service personnel perform other system services.
- Keep the area around the chassis clear and free from dust before, during, and after installation.
- Keep tools away from areas where people could trip on them.
- Wear safety glasses if you are working under any conditions that could be hazardous to your eyes.
- Do not perform any actions that create a potential hazard to people or make the equipment unsafe.
- Never install or manipulate wiring during electrical storms.
- Never install electrical jacks in wet locations unless the jacks are specifically designed for wet environments.
- Do not open or remove chassis covers or sheet metal parts unless instructions are provided in this guide. Such an action could cause severe electrical shock.
- Do not push or force any objects through any opening in the chassis frame. Such an action could result in electrical shock or fire.
- Avoid spilling liquid onto the services gateway chassis or onto any services gateway component. Such an action could cause electrical shock or damage the services gateway.
- Avoid touching uninsulated electrical wires or terminals that have not been disconnected from their power source. Such an action could cause electrical shock.

Qualified Personnel Warning

WARNING: Only trained and qualified personnel should install or replace the services gateway.

Waarschuwing Installatie en reparaties mogen uitsluitend door getraind en bevoegd personeel uitgevoerd worden.

Varoitus Ainoastaan koulutettu ja pätevä henkilökunta saa asentaa tai vaihtaa tämän laitteen.

Attention Tout installation ou remplacement de l'appareil doit être réalisé par du personnel qualifié et compétent.

Warnung Gerät nur von geschultem, qualifiziertem Personal installieren oder auswechseln lassen.

Avvertenza Solo personale addestrato e qualificato deve essere autorizzato ad installare o sostituire questo apparecchio.

Advarsel Kun kvalifisert personell med riktig opplæring bør montere eller bytte ut dette utstyret.

Aviso Este equipamento deverá ser instalado ou substituído apenas por pessoal devidamente treinado e qualificado.

¡Atención! Estos equipos deben ser instalados y reemplazados exclusivamente por personal técnico adecuadamente preparado y capacitado.

Varning! Denna utrustning ska endast installeras och bytas ut av utbildad och kvalificerad personal.

Restricted Access Area Warning

WARNING: The services gateway is intended for installation in restricted access areas. A restricted access area is an area to which access can be gained only by service personnel through the use of a special tool, lock and key, or other means of security, and which is controlled by the authority responsible for the location.

Waarschuwing Dit toestel is bedoeld voor installatie op plaatsen met beperkte toegang. Een plaats met beperkte toegang is een plaats waar toegang slechts door servicepersoneel verkregen kan worden door middel van een speciaal instrument, een slot en sleutel, of een ander veiligheidsmiddel, en welke beheerd wordt door de overheidsinstantie die verantwoordelijk is voor de locatie.

Varoitus Tämä laite on tarkoitettu asennettavaksi paikkaan, johon pääsy on rajoitettua. Paikka, johon pääsy on rajoitettua, tarkoittaa paikkaa, johon vain huoltohenkilöstö pääsee jonkin erikoistyökalun, lukkoon sopivan avaimen tai jonkin muun turvalaitteen avulla ja joka on paikasta vastuussa olevien toimivaltaisten henkilöiden valvoma.

Attention Cet appareil est à installer dans des zones d'accès réservé. Ces dernières sont des zones auxquelles seul le personnel de service peut accéder en utilisant un outil spécial, un mécanisme de verrouillage et une clé, ou tout autre moyen de sécurité. L'accès aux zones de sécurité est sous le contrôle de l'autorité responsable de l'emplacement.

Warnung Diese Einheit ist zur Installation in Bereichen mit beschränktem Zutritt vorgesehen. Ein Bereich mit beschränktem Zutritt ist ein Bereich, zu dem nur Wartungspersonal mit einem Spezialwerkzeugs, Schloß und Schlüssel oder anderer Sicherheitsvorkehrungen Zugang hat, und der von dem für die Anlage zuständigen Gremium kontrolliert wird.

Avvertenza Questa unità deve essere installata in un'area ad accesso limitato. Un'area ad accesso limitato è un'area accessibile solo a personale di assistenza tramite un'attrezzo speciale, lucchetto, o altri dispositivi di sicurezza, ed è controllata dall'autorità responsabile della zona.

Advarsel Denne enheten er laget for installasjon i områder med begrenset adgang. Et område med begrenset adgang gir kun adgang til servicepersonale som bruker et spesielt verktøy, lås og nøkkel, eller en annen sikkerhetsanordning, og det kontrolleres av den autoriteten som er ansvarlig for området.

Aviso Esta unidade foi concebida para instalação em áreas de acesso restrito. Uma área de acesso restrito é uma área à qual apenas tem acesso o pessoal de serviço autorizado, que possua uma ferramenta, chave e fechadura especial, ou qualquer outra forma de segurança. Esta área é controlada pela autoridade responsável pelo local.

¡Atención! Esta unidad ha sido diseñada para instalarse en áreas de acceso restringido. Área de acceso restringido significa un área a la que solamente tiene acceso el personal de servicio mediante la utilización de una herramienta especial, cerradura con llave, o algún otro medio de seguridad, y que está bajo el control de la autoridad responsable del local.

Varning! Denna enhet är avsedd för installation i områden med begränsat tillträde. Ett område med begränsat tillträde får endast tillträdas av servicepersonal med ett speciellt verktyg, lås och nyckel, eller annan säkerhetsanordning, och kontrolleras av den auktoritet som ansvarar för området.

Preventing Electrostatic Discharge Damage to the Services Gateway

Many services gateway hardware components are sensitive to damage from static electricity. Some components can be impaired by voltages as low as 30 V. You can easily generate potentially damaging static voltages whenever you handle plastic or foam packing material or if you move components across plastic or carpets. Observe the following guidelines to minimize the potential for electrostatic discharge (ESD) damage, which can cause intermittent or complete component failures:

■ Always use an ESD wrist strap or ankle strap, and verify that it is in direct contact with your skin.

⚠️ **CAUTION:** For safety, periodically check the resistance value of the ESD strap. The measurement should be in the range of 1 to 10 Mohms.

■ When handling any component that is removed from the chassis, verify that the equipment end of your ESD strap is attached to one of the ESD points on the chassis.

■ Avoid contact between the component and your clothing. ESD voltages emitted from clothing can still damage components.

■ When removing or installing a component, always place it component-side up on an antistatic surface, in an antistatic card rack, or in an electrostatic bag. If you are returning a component, place it into an electrostatic bag before packing it. See Figure 29 on page 136.

Figure 29: Placing a Component into an Electrostatic Bag
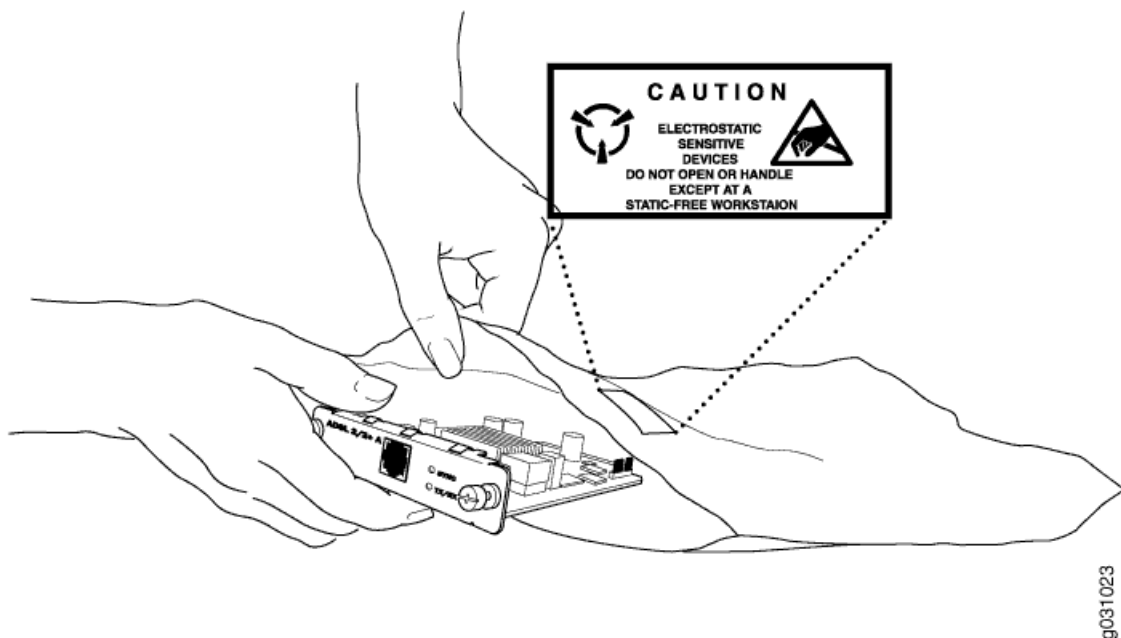
Related Topics ■ SRX210 Services Gateway Definition of Safety Warning Levels on page 131

■ SRX210 Services Gateway Fire Safety Requirements on page 137

SRX210 Services Gateway Fire Safety Requirements

In the event of a fire emergency involving devices and other network equipment, the safety of people is the primary concern. Establish procedures for protecting people in the event of a fire emergency, provide safety training, and properly provision fire-control equipment and fire extinguishers.

In addition, establish procedures to protect your equipment in the event of a fire emergency. Juniper Networks products should be installed in an environment suitable for electronic equipment. We recommend that fire suppression equipment be available in the event of a fire in the vicinity of the equipment and that all local fire, safety, and electrical codes and ordinances be observed when installing and operating your equipment.

In the event of an electrical hazard or an electrical fire, first turn power off to the equipment at the source. Then use a Type C fire extinguisher to extinguish the fire. Type C fire extinguishers, which use noncorrosive fire retardants such as carbon dioxide (CO_2) and Halotron, are most effective for suppressing electrical fires. Type C fire extinguishers displace the oxygen from the point of combustion to eliminate the fire. For extinguishing fire on or around equipment that draws air from the environment for cooling, use this type of inert oxygen displacement extinguisher instead of an extinguisher that leave residues on equipment.

Do not use multipurpose Type ABC chemical fire extinguishers (dry chemical fire extinguishers) near Juniper Networks equipment. The primary ingredient in these fire extinguishers is monoammonium phosphate, which is very sticky and difficult to clean. In addition, in minute amounts of moisture, monoammonium phosphate can become highly corrosive and corrodes most metals.

Any equipment in a room in which a chemical fire extinguisher has been discharged is subject to premature failure and unreliable operation. The equipment is considered to be irreparably damaged.

NOTE: To keep warranties effective, do not use a dry chemical fire extinguisher to control a fire at or near a Juniper Networks services gateway. If a dry chemical fire extinguisher is used, the unit is no longer eligible for coverage under a service agreement.

We recommend that you dispose of any irreparably damaged equipment in an environmentally responsible manner.

Related Topics
■ SRX210 Services Gateway General Safety Guidelines and Warnings on page 133

■ SRX210 Services Gateway Installation Safety Guidelines and Warnings on page 138

SRX210 Services Gateway Installation Safety Guidelines and Warnings

Installation Instructions Warning

WARNING: Read the installation instructions before you connect the services gateway to a power source.

Waarschuwing Raadpleeg de installatie-aanwijzingen voordat u het systeem met de voeding verbindt.

Varoitus Lue asennusohjeet ennen järjestelmän yhdistämistä virtalähteeseen.

Attention Avant de brancher le système sur la source d'alimentation, consulter les directives d'installation.

Warnung Lesen Sie die Installationsanweisungen, bevor Sie das System an die Stromquelle anschließen.

Avvertenza Consultare le istruzioni di installazione prima di collegare il sistema all'alimentatore.

Advarsel Les installasjonsinstruksjonene før systemet kobles til strømkilden.

Aviso Leia as instruções de instalação antes de ligar o sistema à sua fonte de energia.

¡Atención! Ver las instrucciones de instalación antes de conectar el sistema a la red de alimentación.

Varning! Läs installationsanvisningarna innan du kopplar systemet till dess strömförsörjningsenhet.

Rack-Mounting Requirements and Warnings

Ensure that the equipment rack into which the services gateway is installed is evenly and securely supported to avoid the hazardous condition that could result from uneven mechanical loading.

WARNING: To prevent bodily injury when mounting or servicing the services gateway in a rack, take the following precautions to ensure that the system remains stable. The following directives help maintain your safety:

- The services gateway must be installed into a rack that is secured to the building structure.

- The services gateway should be mounted at the bottom of the rack if it is the only unit in the rack.

- When mounting the services gateway in a partially filled rack, load the rack from the bottom to the top with the heaviest component at the bottom of the rack.

- If the rack is provided with stabilizing devices, install the stabilizers before mounting or servicing the services gateway in the rack.

Waarschuwing Om lichamelijk letsel te voorkomen wanneer u dit toestel in een rek monteert of het daar een servicebeurt geeft, moet u speciale voorzorgsmaatregelen nemen om ervoor te zorgen dat het toestel stabiel blijft. De onderstaande richtlijnen worden verstrekt om uw veiligheid te verzekeren:

- De Juniper Networks services gateway moet in een stellage worden geïnstalleerd die aan een bouwsel is verankerd.

- Dit toestel dient onderaan in het rek gemonteerd te worden als het toestel het enige in het rek is.

- Wanneer u dit toestel in een gedeeltelijk gevuld rek monteert, dient u het rek van onderen naar boven te laden met het zwaarste onderdeel onderaan in het rek.

- Als het rek voorzien is van stabiliseringshulpmiddelen, dient u de stabilisatoren te monteren voordat u het toestel in het rek monteert of het daar een servicebeurt geeft.

Varoitus Kun laite asetetaan telineeseen tai huolletaan sen ollessa telineessä, on noudatettava erityisiä varotoimia järjestelmän vakavuuden säilyttämiseksi, jotta vältytään loukkaantumiselta. Noudata seuraavia turvallisuusohjeita:

- Juniper Networks services gateway on asennettava telineeseen, joka on kiinnitetty rakennukseen.

- Jos telineessä ei ole muita laitteita, aseta laite telineen alaosaan.

- Jos laite asetetaan osaksi täytettyyn telineeseen, aloita kuormittaminen sen alaosasta kaikkein raskaimmalla esineellä ja siirry sitten sen yläosaan.

- Jos telinettä varten on vakaimet, asenna ne ennen laitteen asettamista telineeseen tai sen huoltamista siinä.

Attention Pour éviter toute blessure corporelle pendant les opérations de montage ou de réparation de cette unité en casier, il convient de prendre des précautions spéciales afin de maintenir la stabilité du système. Les directives ci-dessous sont destinées à assurer la protection du personnel:

- Le rack sur lequel est monté le Juniper Networks services gateway doit être fixé à la structure du bâtiment.

- Si cette unité constitue la seule unité montée en casier, elle doit être placée dans le bas.

- Si cette unité est montée dans un casier partiellement rempli, charger le casier de bas en haut en plaçant l'élément le plus lourd dans le bas.

- Si le casier est équipé de dispositifs stabilisateurs, installer les stabilisateurs avant de monter ou de réparer l'unité en casier.

Warnung Zur Vermeidung von Körperverletzung beim Anbringen oder Warten dieser Einheit in einem Gestell müssen Sie besondere Vorkehrungen treffen, um sicherzustellen, daß das System stabil bleibt. Die folgenden Richtlinien sollen zur Gewährleistung Ihrer Sicherheit dienen:

■ Der Juniper Networks services gateway muß in einem Gestell installiert werden, das in der Gebäudestruktur verankert ist.

■ Wenn diese Einheit die einzige im Gestell ist, sollte sie unten im Gestell angebracht werden.

■ Bei Anbringung dieser Einheit in einem zum Teil gefüllten Gestell ist das Gestell von unten nach oben zu laden, wobei das schwerste Bauteil unten im Gestell anzubringen ist.

■ Wird das Gestell mit Stabilisierungszubehör geliefert, sind zuerst die Stabilisatoren zu installieren, bevor Sie die Einheit im Gestell anbringen oder sie warten.

Avvertenza Per evitare infortuni fisici durante il montaggio o la manutenzione di questa unità in un supporto, occorre osservare speciali precauzioni per garantire che il sistema rimanga stabile. Le seguenti direttive vengono fornite per garantire la sicurezza personale:

■ Il Juniper Networks services gateway deve essere installato in un telaio, il quale deve essere fissato alla struttura dell'edificio.

■ Questa unità deve venire montata sul fondo del supporto, se si tratta dell'unica unità da montare nel supporto.

■ Quando questa unità viene montata in un supporto parzialmente pieno, caricare il supporto dal basso all'alto, con il componente più pesante sistemato sul fondo del supporto.

■ Se il supporto è dotato di dispositivi stabilizzanti, installare tali dispositivi prima di montare o di procedere alla manutenzione dell'unità nel supporto.

Advarsel Unngå fysiske skader under montering eller reparasjonsarbeid på denne enheten når den befinner seg i et kabinett. Vær nøye med at systemet er stabilt. Følgende retningslinjer er gitt for å verne om sikkerheten:

■ Juniper Networks services gateway må installeres i et stativ som er forankret til bygningsstrukturen.

■ Denne enheten bør monteres nederst i kabinettet hvis dette er den eneste enheten i kabinettet.

■ Ved montering av denne enheten i et kabinett som er delvis fylt, skal kabinettet lastes fra bunnen og opp med den tyngste komponenten nederst i kabinettet.

■ Hvis kabinettet er utstyrt med stabiliseringsutstyr, skal stabilisatorene installeres før montering eller utføring av reparasjonsarbeid på enheten i kabinettet.

Aviso Para se prevenir contra danos corporais ao montar ou reparar esta unidade numa estante, deverá tomar precauções especiais para se certificar de que o sistema possui um suporte estável. As seguintes directrizes ajudá-lo-ão a efectuar o seu trabalho com segurança:

- O Juniper Networks services gateway deverá ser instalado numa prateleira fixa à estrutura do edificio.

- Esta unidade deverá ser montada na parte inferior da estante, caso seja esta a única unidade a ser montada.

- Ao montar esta unidade numa estante parcialmente ocupada, coloque os itens mais pesados na parte inferior da estante, arrumando-os de baixo para cima.

- Se a estante possuir um dispositivo de estabilização, instale-o antes de montar ou reparar a unidade.

¡Atención! Para evitar lesiones durante el montaje de este equipo sobre un bastidor, o posteriormente durante su mantenimiento, se debe poner mucho cuidado en que el sistema quede bien estable. Para garantizar su seguridad, proceda según las siguientes instrucciones:

- El Juniper Networks services gateway debe instalarse en un bastidor fijado a la estructura del edificio.

- Colocar el equipo en la parte inferior del bastidor, cuando sea la única unidad en el mismo.

- Cuando este equipo se vaya a instalar en un bastidor parcialmente ocupado, comenzar la instalación desde la parte inferior hacia la superior colocando el equipo más pesado en la parte inferior.

- Si el bastidor dispone de dispositivos estabilizadores, instalar éstos antes de montar o proceder al mantenimiento del equipo instalado en el bastidor.

Varning! För att undvika kroppsskada när du installerar eller utför underhållsarbete på denna enhet på en ställning måste du vidta särskilda försiktighetsåtgärder för att försäkra dig om att systemet står stadigt. Följande riktlinjer ges för att trygga din säkerhet:

- Juniper Networks services gateway måste installeras i en ställning som är förankrad i byggnadens struktur.

- Om denna enhet är den enda enheten på ställningen skall den installeras längst ned på ställningen.

- Om denna enhet installeras på en delvis fylld ställning skall ställningen fyllas nedifrån och upp, med de tyngsta enheterna längst ned på ställningen.

- Om ställningen är försedd med stabiliseringsdon skall dessa monteras fast innan enheten installeras eller underhålls på ställningen.

Related Topics
- SRX210 Services Gateway Fire Safety Requirements on page 137

- SRX210 Services Gateway Laser and LED Safety Guidelines and Warnings on page 142

SRX210 Services Gateway Laser and LED Safety Guidelines and Warnings

The 1-Port SFP Mini-Physical Interface Module (Mini-PIM) is equipped with laser transmitters, which are considered a Class 1 Laser Product by the U.S. Food and Drug Administration, and they are evaluated as a Class 1 Laser Product per EN 60825–1 +A11 +A2 requirements.

This topic includes the following sections:

- Laser and LED Safety Guidelines and Warnings on page 142

Laser and LED Safety Guidelines and Warnings

General Laser Safety Guidelines

When working around Mini-PIMs, observe the following safety guidelines to prevent eye injury:

- Do not look into unterminated ports or at fibers that connect to unknown sources.
- Do not examine unterminated optical ports with optical instruments.
- Avoid direct exposure to the beam.

WARNING: Unterminated optical connectors can emit invisible laser radiation. The lens in the human eye focuses all the laser power on the retina, so focusing the eye directly on a laser source—even a low-power laser—could permanently damage the eye.

Class 1 Laser Product Warning

WARNING: Class 1 laser product.

Waarschuwing Klasse-1 laser produkt.

Varoitus Luokan 1 lasertuote.

Attention Produit laser de classe I.

Warnung Laserprodukt der Klasse 1.

Avvertenza Prodotto laser di Classe 1.

Advarsel Laserprodukt av klasse 1.

Aviso Produto laser de classe 1.

¡Atención! Producto láser Clase I.

Varning! Laserprodukt av klass 1.

Class 1 LED Product Warning

WARNING: Class 1 LED product.

Waarschuwing Klasse 1 LED-product.

Varoitus Luokan 1 valodiodituote.

Attention Alarme de produit LED Class I.

Warnung Class 1 LED-Produktwarnung.

Avvertenza Avvertenza prodotto LED di Classe 1.

Advarsel LED-produkt i klasse 1.

Aviso Produto de classe 1 com LED.

¡Atención! Aviso sobre producto LED de Clase 1.

Varning! Lysdiodprodukt av klass 1.

Laser Beam Warning

WARNING: Do not stare into the laser beam or view it directly with optical instruments.

Waarschuwing Niet in de straal staren of hem rechtstreeks bekijken met optische instrumenten.

Varoitus Älä katso säteeseen äläkä tarkastele sitä suoraan optisen laitteen avulla.

Attention Ne pas fixer le faisceau des yeux, ni l'observer directement à l'aide d'instruments optiques.

Warnung Nicht direkt in den Strahl blicken und ihn nicht direkt mit optischen Geräten prüfen.

Avvertenza Non fissare il raggio con gli occhi né usare strumenti ottici per osservarlo direttamente.

Advarsel Stirr eller se ikke direkte p strlen med optiske instrumenter.

Aviso Não olhe fixamente para o raio, nem olhe para ele directamente com instrumentos ópticos.

¡Atención! No mirar fijamente el haz ni observarlo directamente con instrumentos ópticos.

Varning! Rikta inte blicken in mot strålen och titta inte direkt på den genom optiska instrument.

Radiation from Open Port Apertures Warning

WARNING: Because invisible radiation may be emitted from the aperture of the port when no fiber cable is connected, avoid exposure to radiation and do not stare into open apertures.

Waarschuwing Aangezien onzichtbare straling vanuit de opening van de poort kan komen als er geen fiberkabel aangesloten is, dient blootstelling aan straling en het kijken in open openingen vermeden te worden.

Varoitus Koska portin aukosta voi emittoitua näkymätöntä säteilyä, kun kuitukaapelia ei ole kytkettynä, vältä säteilylle altistumista äläkä katso avoimiin aukkoihin.

Attention Des radiations invisibles à l'il nu pouvant traverser l'ouverture du port lorsqu'aucun câble en fibre optique n'y est connecté, il est recommandé de ne pas regarder fixement l'intérieur de ces ouvertures.

Warnung Aus der Port-Öffnung können unsichtbare Strahlen emittieren, wenn kein Glasfaserkabel angeschlossen ist. Vermeiden Sie es, sich den Strahlungen auszusetzen, und starren Sie nicht in die Öffnungen!

Avvertenza Quando i cavi in fibra non sono inseriti, radiazioni invisibili possono essere emesse attraverso l'apertura della porta. Evitate di esporvi alle radiazioni e non guardate direttamente nelle aperture.

Advarsel Unngå utsettelse for stråling, og stirr ikke inn i åpninger som er åpne, fordi usynlig stråling kan emiteres fra portens åpning når det ikke er tilkoblet en fiberkabel.

Aviso Dada a possibilidade de emissão de radiação invisível através do orifício da via de acesso, quando esta não tiver nenhum cabo de fibra conectado, deverá evitar a exposição à radiação e não deverá olhar fixamente para orifícios que se encontrarem a descoberto.

¡Atención! Debido a que la apertura del puerto puede emitir radiación invisible cuando no existe un cable de fibra conectado, evite mirar directamente a las aperturas para no exponerse a la radiación.

Varning! Osynlig strålning kan avges från en portöppning utan ansluten fiberkabel och du bör därför undvika att bli utsatt för strålning genom att inte stirra in i oskyddade öppningar.

Related Topics
- SRX210 Services Gateway Installation Safety Guidelines and Warnings on page 138
- SRX210 Services Gateway Maintenance and Operational Safety Guidelines and Warnings on page 145

SRX210 Services Gateway Maintenance and Operational Safety Guidelines and Warnings

This topic includes the following section:

- Safety Guidelines and Warnings on page 145

Safety Guidelines and Warnings

Battery Handling Warning

WARNING: Replacing the battery incorrectly might result in an explosion. Replace the battery only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions.

Waarschuwing Er is ontploffingsgevaar als de batterij verkeerd vervangen wordt. Vervang de batterij slechts met hetzelfde of een equivalent type dat door de fabrikant aanbevolen is. Gebruikte batterijen dienen overeenkomstig fabrieksvoorschriften weggeworpen te worden.

Varoitus Räjähdyksen vaara, jos akku on vaihdettu väärään akkuun. Käytä vaihtamiseen ainoastaan saman- tai vastaavantyyppistä akkua, joka on valmistajan suosittelema. Hävitä käytetyt akut valmistajan ohjeiden mukaan.

Attention Danger d'explosion si la pile n'est pas remplacée correctement. Ne la remplacer que par une pile de type semblable ou équivalent, recommandée par le fabricant. Jeter les piles usagées conformément aux instructions du fabricant.

Warnung Bei Einsetzen einer falschen Batterie besteht Explosionsgefahr. Ersetzen Sie die Batterie nur durch den gleichen oder vom Hersteller empfohlenen Batterietyp. Entsorgen Sie die benutzten Batterien nach den Anweisungen des Herstellers.

Avvertenza Pericolo di esplosione se la batteria non è installata correttamente. Sostituire solo con una di tipo uguale o equivalente, consigliata dal produttore. Eliminare le batterie usate secondo le istruzioni del produttore.

Advarsel Det kan være fare for eksplosjon hvis batteriet skiftes på feil måte. Skift kun med samme eller tilsvarende type som er anbefalt av produsenten. Kasser brukte batterier i henhold til produsentens instruksjoner.

Aviso Existe perigo de explosão se a bateria for substituída incorrectamente. Substitua a bateria por uma bateria igual ou de um tipo equivalente recomendado pelo fabricante. Destrua as baterias usadas conforme as instruções do fabricante.

¡Atención! Existe peligro de explosión si la batería se reemplaza de manera incorrecta. Reemplazar la batería exclusivamente con el mismo tipo o el equivalente recomendado por el fabricante. Desechar las baterías gastadas según las instrucciones del fabricante.

Varning! Explosionsfara vid felaktigt batteribyte. Ersätt endast batteriet med samma batterityp som rekommenderas av tillverkaren eller motsvarande. Följ tillverkarens anvisningar vid kassering av använda batterier.

Jewelry Removal Warning

WARNING: Before working on equipment that is connected to power lines, remove jewelry, including rings, necklaces, and watches. Metal objects heat up when connected to power and ground and can cause serious burns or weld the metal object to the terminals.

Waarschuwing Alvorens aan apparatuur te werken die met elektrische leidingen is verbonden, sieraden (inclusief ringen, kettingen en horloges) verwijderen. Metalen voorwerpen worden warm wanneer ze met stroom en aarde zijn verbonden, en kunnen ernstige brandwonden veroorzaken of het metalen voorwerp aan de aansluitklemmen lassen.

Varoitus Ennen kuin työskentelet voimavirtajohtoihin kytkettyjen laitteiden parissa, ota pois kaikki korut (sormukset, kaulakorut ja kellot mukaan lukien). Metalliesineet kuumenevat, kun ne ovat yhteydessä sähkövirran ja maan kanssa, ja ne voivat aiheuttaa vakavia palovammoja tai hitsata metalliesineet kiinni liitäntänapoihin.

Attention Avant d'accéder à cet équipement connecté aux lignes électriques, ôter tout bijou (anneaux, colliers et montres compris). Lorsqu'ils sont branchés à l'alimentation et reliés à la terre, les objets métalliques chauffent, ce qui peut provoquer des blessures graves ou souder l'objet métallique aux bornes.

Warnung Vor der Arbeit an Geräten, die an das Netz angeschlossen sind, jeglichen Schmuck (einschließlich Ringe, Ketten und Uhren) abnehmen. Metallgegenstände erhitzen sich, wenn sie an das Netz und die Erde angeschlossen werden, und können schwere Verbrennungen verursachen oder an die Anschlußklemmen angeschweißt werden.

Avvertenza Prima di intervenire su apparecchiature collegate alle linee di alimentazione, togliersi qualsiasi monile (inclusi anelli, collane, braccialetti ed orologi). Gli oggetti metallici si riscaldano quando sono collegati tra punti di alimentazione e massa: possono causare ustioni gravi oppure il metallo può saldarsi ai terminali.

Advarsel Fjern alle smykker (inkludert ringer, halskjeder og klokker) før du skal arbeide på utstyr som er koblet til kraftledninger. Metallgjenstander som er koblet til kraftledninger og jord blir svært varme og kan forårsake alvorlige brannskader eller smelte fast til polene.

Aviso Antes de trabalhar em equipamento que esteja ligado a linhas de corrente, retire todas as jóias que estiver a usar (incluindo anéis, fios e relógios). Os objectos metálicos aquecerão em contacto com a corrente e em contacto com a ligação à terra, podendo causar queimaduras graves ou ficarem soldados aos terminais.

¡Atención! Antes de operar sobre equipos conectados a líneas de alimentación, quitarse las joyas (incluidos anillos, collares y relojes). Los objetos de metal se calientan cuando se conectan a la alimentación y a tierra, lo que puede ocasionar quemaduras graves o que los objetos metálicos queden soldados a los bornes.

Varning! Tag av alla smycken (inklusive ringar, halsband och armbandsur) innan du arbetar på utrustning som är kopplad till kraftledningar. Metallobjekt hettas upp när de kopplas ihop med ström och jord och kan förorsaka allvarliga brännskador; metallobjekt kan också sammansvetsas med kontakterna.

Lightning Activity Warning

WARNING: Do not work on the system or connect or disconnect cables during periods of lightning activity.

Waarschuwing Tijdens onweer dat gepaard gaat met bliksem, dient u niet aan het systeem te werken of kabels aan te sluiten of te ontkoppelen.

Varoitus Älä työskentele järjestelmän parissa äläkä yhdistä tai irrota kaapeleita ukkosilmalla.

Attention Ne pas travailler sur le système ni brancher ou débrancher les câbles pendant un orage.

Warnung Arbeiten Sie nicht am System und schließen Sie keine Kabel an bzw. trennen Sie keine ab, wenn es gewittert.

Avvertenza Non lavorare sul sistema o collegare oppure scollegare i cavi durante un temporale con fulmini.

Advarsel Utfør aldri arbeid på systemet, eller koble kabler til eller fra systemet når det tordner eller lyner.

Aviso Não trabalhe no sistema ou ligue e desligue cabos durante períodos de mau tempo (trovoada).

¡Atención! No operar el sistema ni conectar o desconectar cables durante el transcurso de descargas eléctricas en la atmósfera.

Varning! Vid åska skall du aldrig utföra arbete på systemet eller ansluta eller koppla loss kablar.

Operating Temperature Warning

WARNING: To prevent the services gateway from overheating, do not operate it in an area that exceeds the maximum recommended ambient temperature of 104°F (40°C). To prevent airflow restriction, allow at least 6 in. (15.2 cm) of clearance around the ventilation openings.

Waarschuwing Om te voorkomen dat welke services gateway van de Juniper Networks services gateway dan ook oververhit raakt, dient u deze niet te bedienen op een plaats waar de maximale aanbevolen omgevingstemperatuur van 40°C wordt overschreden. Om te voorkomen dat de luchtstroom wordt beperkt, dient er minstens 15,2 cm speling rond de ventilatie-openingen te zijn.

Varoitus Ettei Juniper Networks services gateway-sarjan reititin ylikuumentuisi, sitä ei saa käyttää tilassa, jonka lämpötila ylittää korkeimman suositellun ympäristölämpötilan 40°C. Ettei ilmanvaihto estyisi, tuuletusaukkojen ympärille on jätettävä ainakin 15,2 cm tilaa.

Attention Pour éviter toute surchauffe des routeurs de la gamme Juniper Networks services gateway, ne l'utilisez pas dans une zone où la température ambiante est supérieure à 40°C. Pour permettre un flot d'air constant, dégagez un espace d'au moins 15,2 cm autour des ouvertures de ventilations.

Warnung Um einen services gateway der services gateway vor Überhitzung zu schützen, darf dieser nicht in einer Gegend betrieben werden, in der die Umgebungstemperatur das empfohlene Maximum von 40°C überschreitet. Um Lüftungsverschluß zu verhindern, achten Sie darauf, daß mindestens 15,2 cm lichter Raum um die Lüftungsöffnungen herum frei bleibt.

Avvertenza Per evitare il surriscaldamento dei services gateway, non adoperateli in un locale che ecceda la temperatura ambientale massima di 40°C. Per evitare che la circolazione dell'aria sia impedita, lasciate uno spazio di almeno 15.2 cm di fronte alle aperture delle ventole.

Advarsel Unngå overoppheting av eventuelle rutere i Juniper Networks services gateway Disse skal ikke brukes på steder der den anbefalte maksimale omgivelsestemperaturen overstiger 40°C (104°F). Sørg for at klaringen rundt lufteåpningene er minst 15,2 cm (6 tommer) for å forhindre nedsatt luftsirkulasjon.

Aviso Para evitar o sobreaquecimento do encaminhador Juniper Networks services gateway, não utilize este equipamento numa área que exceda a temperatura máxima recomendada de 40°C. Para evitar a restrição à circulação de ar, deixe pelo menos um espaço de 15,2 cm à volta das aberturas de ventilação.

¡Atención! Para impedir que un encaminador de la serie Juniper Networks services gateway se recaliente, no lo haga funcionar en un área en la que se supere la temperatura ambiente máxima recomendada de 40°C. Para impedir la restricción de la entrada de aire, deje un espacio mínimo de 15,2 cm alrededor de las aperturas para ventilación.

Varning! Förhindra att en Juniper Networks services gateway överhettas genom att inte använda den i ett område där den maximalt rekommenderade omgivningstemperaturen på 40⁰C överskrids. Förhindra att luftcirkulationen inskränks genom att se till att det finns fritt utrymme på minst 15,2 cm omkring ventilationsöppningarna.

Product Disposal Warning

WARNING: Disposal of this product must be handled according to all national laws and regulations.

Waarschuwing Dit produkt dient volgens alle landelijke wetten en voorschriften te worden afgedankt.

Varoitus Tämän tuotteen lopullisesta hävittämisestä tulee huolehtia kaikkia valtakunnallisia lakeja ja säännöksiä noudattaen.

Attention La mise au rebut définitive de ce produit doit être effectuée conformément à toutes les lois et réglementations en vigueur.

Warnung Dieses Produkt muß den geltenden Gesetzen und Vorschriften entsprechend entsorgt werden.

Avvertenza L'eliminazione finale di questo prodotto deve essere eseguita osservando le normative italiane vigenti in materia

Advarsel Endelig disponering av dette produktet må skje i henhold til nasjonale lover og forskrifter.

Aviso A descartagem final deste produto deverá ser efectuada de acordo com os regulamentos e a legislação nacional.

¡Atención! El desecho final de este producto debe realizarse según todas las leyes y regulaciones nacionales

Varning! Slutlig kassering av denna produkt bör skötas i enlighet med landets alla lagar och föreskrifter.

Related Topics
- SRX210 Services Gateway Laser and LED Safety Guidelines and Warnings on page 142
- SRX210 Services Gateway Electrical Safety Guidelines and Warnings on page 150

SRX210 Services Gateway Electrical Safety Guidelines and Warnings

In Case of Electrical Accident

If an electrical accident results in an injury, take the following actions in this order:

1. Use caution. Be aware of potentially hazardous conditions that could cause further injury.

2. Disconnect power from the services gateway.

3. If possible, send another person to get medical aid. Otherwise, assess the condition of the victim, then call for help.

General Electrical Safety Guidelines and Warnings

- Install the services gateway in compliance with the following local, national, or international electrical codes:

  - United States—National Fire Protection Association (NFPA 70), United States National Electrical Code

  - Canada—Canadian Electrical Code, Part 1, CSA C22.1

  - Other countries—International Electromechanical Commission (IEC) 60364, Part 1 through Part 7

  - Evaluated to the TN power system

- Locate the emergency power-off switch for the room in which you are working so that if an electrical accident occurs, you can quickly turn off the power.

- Do not work alone if potentially hazardous conditions exist anywhere in your workspace.

- Never assume that power is disconnected from a circuit. Always check the circuit before starting to work.

- Carefully look for possible hazards in your work area, such as moist floors, ungrounded power extension cords, and missing safety grounds.

- Operate the services gateway within marked electrical ratings and product usage instructions.

- For the services gateway and peripheral equipment to function safely and correctly, use the cables and connectors specified for the attached peripheral equipment, and make certain they are in good condition.

Related Topics

- SRX210 Services Gateway Electrical and Power Requirements on page 55

- SRX210 Services Gateway Maintenance and Operational Safety Guidelines and Warnings on page 145

- SRX210 Services Gateway Agency Approvals on page 151

- Grounding the SRX210 Services Gateway on page 84

SRX210 Services Gateway Agency Approvals

The SRX210 Services Gateway complies with the following standards:

- Safety
    - CSA 60950-1 (2003) Safety of Information Technology Equipment
    - UL 60950-1 (2003) Safety of Information Technology Equipment
    - EN 60950-1 (2001) Safety of Information Technology Equipment
    - IEC 60950-1 (2001) Safety of Information Technology Equipment (with country deviations)
    - EN 60825-1 + A1 + A2 (1994) Safety of Laser Products - Part 1: Equipment Classification
    - EN 60825-2 (2000) Safety of Laser Products - Part 2: Safety of Optical Fiber Comm. Systems
- EMC
    - EN 300 386 V1.3.3 (2005) Telecom Network Equipment - EMC requirements
- EMI (SRX210 Services Gateway Low Memory and High Memory Models) :
    - FCC Part 15 Class B (2007) USA Radiated Emissions
    - EN 55022 Class B (2006) European Radiated Emissions
    - VCCI Class B (2007) Japanese Radiated Emissions
- EMI (SRX210 Services Gateway with PoE and SRX210 Services Gateway with Integrated Convergence Services) :
    - FCC Part 15 Class A (2007) USA Radiated Emissions
    - EN 55022 Class A (2006) European Radiated Emissions
    - VCCI Class A (2007) Japanese Radiated Emissions

- Immunity

  - EN 55024 + A1 + A2 (1998) Information Technology Equipment Immunity Characteristics

  - EN-61000-3-2 (2006) Power Line Harmonics

  - EN-61000-3-3 + A1 + A2 + A3 (1995) Power Line Voltage Fluctuations

  - EN-61000-4-2 + A1 + A2 (1995) Electrostatic Discharge

  - EN-61000-4-3 + A1 + A2 (2002) Radiated Immunity

  - EN-61000-4-4 (2004) Electrical Fast Transients

  - EN-61000-4-5 (2006) Surge

  - EN-61000-4-6 (2007) Immunity to Conducted Disturbances

  - EN-61000-4-11 (2004) Voltage Dips and Sags

Related Topics
- SRX210 Services Gateway Electrical Safety Guidelines and Warnings on page 150
- SRX210 Services Gateway Compliance Statements for EMC Requirements on page 152
- SRX210 Services Gateway Compliance Statements for Environmental Requirements on page 154
- SRX210 Services Gateway Compliance Statements for Acoustic Noise on page 154

SRX210 Services Gateway Compliance Statements for EMC Requirements

For the SRX210 Services Gateway Low Memory and High Memory Models

Canada

This Class B digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

European Community

This is a Class B product.

Japan

この装置は、情報処理装置等電波障害自主規制協議会（ＶＣＣＩ）の基準に基づくクラスＢ情報技術装置です。この装置は、家庭環境で使用することを目的としていますが、この装置がラジオやテレビジョン受信機に近接して使用されると、受信障害を引き起こすことがあります。
取扱説明書に従って正しい取り扱いをして下さい。

The preceding translates as follows:

This is a Class B product based on the standard of the Voluntary Control Council for Interference by Information Technology Equipment (VCCI). If this product is used near a radio or television receiver in a domestic environment, it may cause radio interference. Install and use the equipment according to the instruction manual.

United States

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.

- Increase the separation between the equipment and receiver.

- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

- Consult the dealer or an experienced radio/TV technician for help.

For the SRX210 Services Gateway with PoE and SRX210 Services Gateway with Integrated Convergence Services

Canada

This Class A digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe A est conforme à la norme NMB-003 du Canada.

European Community

This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

Japan

この装置は、情報処理装置等電波障害自主規制協議会（ＶＣＣＩ）の基準に基づくクラスＡ情報技術装置です。この装置は、家庭環境で使用することを目的としていますが、この装置がラジオやテレビジョン受信機に近接して使用されると、受信障害を引き起こすことがあります。
　取扱説明書に従って正しい取り扱いをして下さい。

The preceding translates as follows:

This is a Class A product based on the standard of the Voluntary Control Council for Interference by Information Technology Equipment (VCCI). If this equipment is used in a domestic environment, radio interference may occur, in which case, the user may be required to take corrective actions.

United States

The services gateway has been tested and found to comply with the limits for a Class A digital device of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Related Topics
- SRX210 Services Gateway Agency Approvals on page 151
- SRX210 Services Gateway Compliance Statements for Environmental Requirements on page 154
- SRX210 Services Gateway Compliance Statements for Acoustic Noise on page 154

SRX210 Services Gateway Compliance Statements for Environmental Requirements

This topic includes the compliance statement for the following environmental requirement:

Lithium Battery

Batteries in this product are not based on mercury, lead, or cadmium substances. The batteries used in this product are in compliance with EU Directives 91/157/EEC, 93/86/EEC, and 98/101/EEC. The product documentation includes instructional information about the proper method of reclamation and recycling.

Related Topics
- SRX210 Services Gateway Compliance Statements for EMC Requirements on page 152
- SRX210 Services Gateway Compliance Statements for Acoustic Noise on page 154
- SRX210 Services Gateway Agency Approvals on page 151

SRX210 Services Gateway Compliance Statements for Acoustic Noise

Maschinenlärminformations-Verordnung - 3. GPSGV, der höchste Schalldruckpegel beträgt 70 dB(A) oder weniger gemäss EN ISO 7779

Translation:

The maximum emitted sound pressure level is 70 dB(A) or less per EN ISO 7779.

Related Topics
- SRX210 Services Gateway Compliance Statements for EMC Requirements on page 152
- SRX210 Services Gateway Compliance Statements for Environmental Requirements on page 154
- SRX210 Services Gateway Agency Approvals on page 151

Appendix B

SRX210 Services Gateway Power Guidelines, Requirements, and Specifications

This appendix includes the following topics:

- SRX210 Services Gateway Site Electrical Wiring Guidelines on page 157
- SRX210 Services Gateway Power Specifications and Requirements on page 158
- SRX210 Services Gateway Grounding Specifications on page 159

SRX210 Services Gateway Site Electrical Wiring Guidelines

Table 46 on page 157 describes the factors you must consider while planning the electrical wiring for the services gateway at your site.

> **CAUTION:** It is particularly important to provide a properly grounded and shielded environment and to use electrical surge-suppression devices.

Table 46: Site Electrical Wiring Guidelines for the Services Gateway

Site Wiring Factor	Guideline
Signaling Limitations	To ensure that signaling functions optimally: ■ Install wires correctly. Improperly installed wires can emit radio interference. ■ Do not exceed the recommended distances or pass wires between buildings. The potential for damage from lightning strikes increases if wires exceed recommended distances or if wires pass between buildings. ■ Shield all conductors. The electromagnetic pulse (EMP) caused by lightning can damage unshielded conductors and destroy electronic devices.

Table 46: Site Electrical Wiring Guidelines for the Services Gateway *(continued)*

Site Wiring Factor	Guideline
Radio Frequency Interference (RFI)	To reduce or eliminate the emission of RFI from your site wiring: ■ Use twisted-pair cable with a good distribution of grounding conductors. ■ Use a high-quality twisted-pair cable with one ground conductor for each data signal when applicable, if you must exceed the recommended distances.
Electromagnetic Compatibility (EMC)	Provide a properly grounded and shielded environment and use electrical surge-suppression devices. Strong sources of electromagnetic interference (EMI) can cause the following damage: ■ Destroy the signal drivers and receivers in the device ■ Conduct power surges over the lines into the equipment, resulting in an electrical hazard **NOTE:** If your site is susceptible to problems with EMC, particularly from lightning or radio transmitters, you may want to seek expert advice.

CAUTION: To comply with intrabuilding lightning/surge requirements, the intrabuilding wiring must be shielded. The shielding for the wiring must be grounded at both ends.

Related Topics
■ General Site Guidelines for Installing the SRX210 Services Gateway on page 51

■ SRX210 Services Gateway Electrical and Power Requirements on page 55

■ SRX210 Services Gateway Power Specifications and Requirements on page 158

SRX210 Services Gateway Power Specifications and Requirements

The AC power system electrical specifications for the SRX210 Services Gateway are listed in Table 47 on page 158.

Table 47: Power Supply Electrical Specifications for the SRX210 Services Gateway

Power Requirement	Specification
AC input voltage	100 to 240 VAC
AC input line frequency	50 to 60 Hz

Table 47: Power Supply Electrical Specifications for the SRX210 Services Gateway *(continued)*

Power Requirement	Specification
AC system current rating	1.5 A maximum
	2.5 A maximum (for PoE and Voice models)

> **WARNING:** The AC power cord for the services gateway is intended for use with the device only and not for any other use.

SRX210 Services Gateway Grounding Specifications

To meet safety and electromagnetic interference (EMI) requirements and to ensure proper operation, the services gateway must be adequately grounded before power is connected. A grounding point available on the rear of the services gateway chassis is used to connect the device to earth ground.

> **WARNING:** Before device installation begins, a licensed electrician must attach a cable lug to the grounding and power cables that you use. A cable with an incorrectly attached lug can damage the device (for example, by causing a short circuit).

To ground the device before connecting power, you connect the grounding cable to earth ground and then attach the lug on the cable to the chassis grounding point with the screw.

Table 48 on page 159 lists the specifications of the grounding cable used with the device.

Table 48: Grounding Cable Specifications for the Services Gateway

Grounding Requirement	Specification
Grounding cable	14 AWG single-strand wire cable

Table 48: Grounding Cable Specifications for the Services Gateway *(continued)*

Grounding Requirement	Specification
Amperage of grounding cable	Up to 4 A
Grounding lug	Ring-type, vinyl-insulated TV14-6R lug or equivalent

Related Topics

- SRX210 Services Gateway Site Electrical Wiring Guidelines on page 157

- SRX210 Services Gateway Power Specifications and Requirements on page 158

- Grounding the SRX210 Services Gateway on page 84

- Interface Cable and Wire Specifications for the SRX210 Services Gateway on page 161

Appendix C
SRX210 Services Gateway Interface Cable Specifications and Connector Pinouts

The network interfaces supported on the services gateway accept different types of network cables.

This appendix includes the following topics:

- Interface Cable and Wire Specifications for the SRX210 Services Gateway on page 161
- RJ-45 Connector Pinouts for the SRX210 Services Gateway Ethernet Port on page 162
- RJ-45 Connector Pinouts for the SRX210 Services Gateway Console Port on page 163
- RJ-11 Connector Pinouts for the SRX210 Services Gateway with Integrated Convergence Services FXO and FXS Ports on page 164

Interface Cable and Wire Specifications for the SRX210 Services Gateway

Table 49 on page 161 lists the specifications for the cables that connect to ports.

Table 49: Cable and Wire Specifications for Ports

Port	Cable Specification	Cable/Wire Required	Maximum Length	Device Receptacle
Console port	RS-232 (EIA-232) serial cable	One 6-ft (1.83-m) length with DB-9/RJ-45 connectors	6 ft (1.83 m)	RJ-45
Ethernet port	CAT-5e (Category 5) cable or equivalent suitable for 100BASE-T operation	One 15-ft (4.57-m) length with RJ-45/RJ-45 connectors	328 ft (100 m)	RJ-45

RJ-45 Connector Pinouts for the SRX210 Services Gateway Ethernet Port

Figure 30 on page 162 shows the RJ-45 cable connector pinouts for Ethernet ports.

Figure 30: Ethernet Cable Connector (RJ-45)

Table 50 on page 162 describes the RJ-45 connector pinouts for the Ethernet port for 10/100 Mbps.

Table 50: RJ-45 Connector Pinouts for the Services Gateway Ethernet Port (10/100 Mbps)

Pin	Signal
1	TX +
2	TX-
3	RX +
4	Termination network
5	Termination network
6	RX-
7	Termination network
8	Termination network

Table 51 on page 163 describes the RJ-45 connector pinouts for the Ethernet port for 1Gbps (1000 Mbps).

Table 51: RJ-45 Connector Pinouts for the Services Gateway Ethernet Port (1 Gbps)

Pin	Signal
1	BI_DA +
2	BI_DA-
3	BI_DB +
4	BI_DC +
5	BI_DC-
6	BI_DB-
7	BI_DD +
8	BI_DD-

Related Topics
- Interface Cable and Wire Specifications for the SRX210 Services Gateway on page 161
- RJ-45 Connector Pinouts for the SRX210 Services Gateway Console Port on page 163
- SRX210 Services Gateway Front Panel and Back Panel Views (Low Memory, High Memory and PoE Version) on page 10

RJ-45 Connector Pinouts for the SRX210 Services Gateway Console Port

Figure 31 on page 163 shows the RJ-45 connector pinouts for the console port.

Figure 31: Console Cable Connector
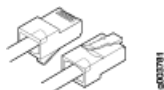
Table 52 on page 163 describes the RJ-45 connector pinouts for the console port.

Table 52: RJ-45 Connector Pinouts for Services Gateway Console Port

Pin	Signal	Description
1	RTS	Request to Send
2	DTR	Data Terminal Ready
3	TXD	Transmit Data
4	Ground	Signal Ground

Table 52: RJ-45 Connector Pinouts for Services Gateway Console Port *(continued)*

Pin	Signal	Description
5	Ground	Signal Ground
6	RXD	Receive Data
7	DSR/DCD	Data Set Ready
8	CTS	Clear to Send

Related Topics

- Interface Cable and Wire Specifications for the SRX210 Services Gateway on page 161
- RJ-45 Connector Pinouts for the SRX210 Services Gateway Ethernet Port on page 162
- RJ-45 Connector Pinouts for the SRX210 Services Gateway Console Port on page 163
- SRX210 Services Gateway Front Panel and Back Panel Views (Low Memory, High Memory and PoE Version) on page 10

RJ-11 Connector Pinouts for the SRX210 Services Gateway with Integrated Convergence Services FXO and FXS Ports

The FXO and FXS ports use an RJ-11 cable.

Table 53 on page 164 describes the RJ-11 connector pinouts.

Table 53: RJ-11 Connector Pinouts

Pin	Signal
1	No connect
2	No connect
3	RJ P –Ring
4	RJ N –Tip
5	No connect
6	No connect

Related Topics
- Interface Cable and Wire Specifications for the SRX210 Services Gateway on page 161
- RJ-45 Connector Pinouts for the SRX210 Services Gateway Ethernet Port on page 162
- RJ-45 Connector Pinouts for the SRX210 Services Gateway Console Port on page 163
- SRX210 Services Gateway with Integrated Convergence Services Front Panel and Back Panel Views on page 12

Appendix D

Contacting Customer Support and Returning the SRX210 Services Gateway Hardware

This appendix describes how to return the SRX210 Services Gateway or an individual component such as Mini-Physical Interface module (Mini-PIM) to Juniper Networks for repair or replacement. This appendix includes the following topics:

- Return Procedure for the SRX210 Services Gateway on page 167
- Locating an SRX210 Services Gateway Component Serial Number and Agency Labels on page 168
- Contacting Customer Support to Obtain Return Materials Authorization on page 170
- Packing the SRX210 Services Gateway and Components for Shipment on page 171

Return Procedure for the SRX210 Services Gateway

Follow the tasks list provided in Table 54 on page 167 to return an SRX210 Services Gateway or component to Juniper Networks for repair or replacement:

Table 54: Return Procedure for SRX210 Services Gateway

Step	Task	For more information, see
1	Determine the part number and serial number of the device or component.	"Locating an SRX210 Services Gateway Component Serial Number and Agency Labels" on page 168
2	Obtain a Return Materials Authorization (RMA) number from JTAC.	"Contacting Customer Support" on page 170
3	Pack the SRX210 Services Gateway or component for shipping.	"Packing the SRX210 Services Gateway and Components for Shipment" on page 171

ℹ️ **NOTE:** Do not return the device or any component to Juniper Networks unless you have first obtained an RMA number. Juniper Networks reserves the right to refuse shipments that do not have an RMA. Refused shipments are returned to the customer via collect freight.

For more information about return and repair policies, see the customer support Web page at http://www.juniper.net/support/guidelines.html.

For product problems or technical support issues, open a support case using the Case Manager link at http://www.juniper.net/support/ or call 1-888-314-JTAC (within the United States) or 1-408-745-9500 (outside the United States).

Related Topics
- Locating an SRX210 Services Gateway Component Serial Number and Agency Labels on page 168
- Information You Might Need to Supply to Juniper Networks Technical Assistance Center on page 170
- Packing the SRX210 Services Gateway and Components for Shipment on page 171
- Contacting Customer Support on page 170

Locating an SRX210 Services Gateway Component Serial Number and Agency Labels

This topic includes the following sections:
- Listing the SRX210 Services Gateway and Component Details with the CLI on page 168
- SRX210 Services Gateway Chassis Serial Number and Agency Labels on page 169
- SRX210 Services Gateway Mini-Physical Interface Module Serial Number Label on page 169

Listing the SRX210 Services Gateway and Component Details with the CLI

Before contacting Juniper Networks to request an RMA, you must find the serial number on the SRX210 Services Gateway or component.

To list all of the SRX210 Services Gateway components and their serial numbers, enter the following command-line interface (CLI) command:

```
user@host> show chassis hardware
Hardware inventory:
Item                 Version  Part number  Serial number       Description

Chassis                                                        SRX210b

Routing Engine       REV X0   750-021778   000000PS2627        RE-SRX210-LOWMEM

FPC 0                                                          FPC
```

```
PIC 0                                                              2x GE, 6x FE, 1x
 3G

Power Supply 0
```

ℹ️ **NOTE:** In the show chassis hardware command, the Mini-Physical Interface Module (Mini-PIM) slot number is reported as an FPC number, and the Mini-PIM number (always 0) is reported as the PIC number.

Most components also have a serial number ID label attached to the component body.

SRX210 Services Gateway Chassis Serial Number and Agency Labels

The SRX210 Services Gateway has a serial number ID and agency labels on the bottom of the chassis as shown in Figure 32 on page 169.

Figure 32: Location of SRX210 Serial Number and Agency Labels
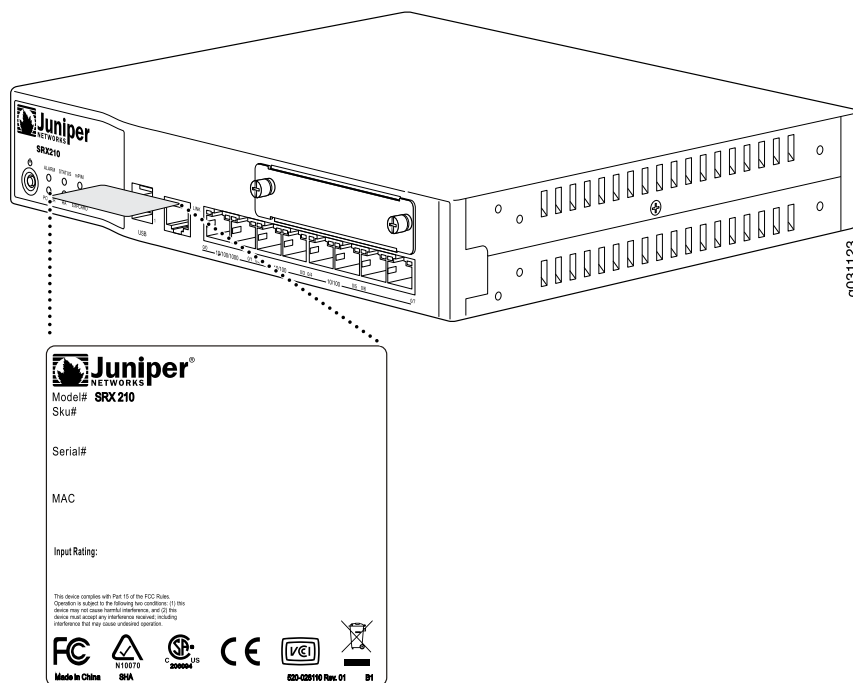
SRX210 Services Gateway Mini-Physical Interface Module Serial Number Label

Mini-Physical Interface Modules (Mini-PIMs) are field-replaceable on the SRX210 Services Gateway. Each Mini-PIM has a unique serial number. The serial number label is located on the right side of the Mini-PIM, when the Mini-PIM is horizontally oriented (as it would be installed on the device). The exact location might be slightly

different on different Mini-PIMs, depending on the placement of components on the Mini-PIM.

Related Topics
- Packing the SRX210 Services Gateway and Components for Shipment on page 171
- Return Procedure for the SRX210 Services Gateway on page 167
- Contacting Customer Support on page 170

Contacting Customer Support to Obtain Return Materials Authorization

This topic includes the following sections:
- Information You Might Need to Supply to Juniper Networks Technical Assistance Center on page 170
- Contacting Customer Support on page 170

Information You Might Need to Supply to Juniper Networks Technical Assistance Center

If you are returning a services gateway or hardware component to Juniper Networks for repair or replacement, obtain a Return Materials Authorization (RMA) number from Juniper Networks Technical Assistance Center (JTAC).

When requesting support from JTAC by telephone, be prepared to provide the following information:
- Your existing case number, if you have one
- Details of the failure or problem
- Type of activity being performed on the services gateway when the problem occurred
- Configuration data displayed by one or more **show** commands
- Your name, organization name, telephone number, fax number, and shipping address

Related Topics
- Return Procedure for the SRX210 Services Gateway on page 167
- Locating an SRX210 Services Gateway Component Serial Number and Agency Labels on page 168
- Packing the SRX210 Services Gateway and Components for Shipment on page 171
- Contacting Customer Support on page 170

Contacting Customer Support

Once you have located the serial numbers of the device or component, you can return the device or component for repair or replacement. For this, you need to contact Juniper Networks Technical Assistance Center (JTAC).

You can contact JTAC 24 hours a day, 7 days a week, using any of the following methods:

■   On the Web: Using the Case Manager link at http://www.juniper.net/support/

■   By telephone:

  ■   From the US and Canada: 1-888-314-JTAC

  ■   From all other locations: 1-408-745-9500

NOTE: If contacting JTAC by telephone, enter your 11-digit case number followed by the pound (#) key if this is an existing case, or press the star (*) key to be routed to the next available support engineer.

Related Topics

■   Return Procedure for the SRX210 Services Gateway on page 167

■   Locating an SRX210 Services Gateway Component Serial Number and Agency Labels on page 168

■   Information You Might Need to Supply to Juniper Networks Technical Assistance Center on page 170

■   Packing the SRX210 Services Gateway and Components for Shipment on page 171

Packing the SRX210 Services Gateway and Components for Shipment

This topic includes the following sections:

■   Packing the Services Gateway on page 171

■   Packing the Components for Shipment on page 172

Packing the Services Gateway

To pack the services gateway for shipment:

1.   Retrieve the shipping carton and packing materials in which the device was originally shipped. If you do not have these materials, contact your Juniper Networks representative about approved packaging materials.

2.   Attach an electrostatic discharge (ESD) grounding strap to your bare wrist and connect the strap to the ESD point on the chassis or to an outside ESD point if the device is disconnected from earth ground.

3.   On the console or other management device connected to the services gateway, enter CLI operational mode and issue the following command to shut down the services gateway software:

user@host> request system power-off

Wait until a message appears on the console confirming that the operating system has halted.

4. Shut down power to the device by pressing the Power button on the front panel of the device.

5. Disconnect power from the device.

6. Remove the cables that connect to all external devices.

7. Remove all field-replaceable units (FRUs) from the device.

8. If the device is installed on a wall or rack, have one person support the weight of the device while another person unscrews and removes the mounting screws.

9. Place the device in the shipping carton.

10. Cover the device with an ESD bag, and place the packing foam on top of and around the device.

11. Replace the accessory box on top of the packing foam.

12. Securely tape the box closed.

13. Write the Return Materials Authorization (RMA) number on the exterior of the box to ensure proper tracking.

Packing the Components for Shipment

Follow these guidelines for packing and shipping individual components of the services gateway:

■ When you return a component, make sure that it is adequately protected with packing materials and packed so that the pieces are prevented from moving around inside the carton.

■ Use the original shipping materials if they are available.

■ Place individual Mini-Physical Interface Modules (Mini-PIMs) in electrostatic bags.

■ Write the Return Materials Authorization (RMA) number on the exterior of the box to ensure proper tracking.

CAUTION: Do not stack any of the services gateway components during packing.

Related Topics
■ Required Tools and Parts for Installing and Maintaining the SRX210 Services Gateway on page 59

■ Locating an SRX210 Services Gateway Component Serial Number and Agency Labels on page 168

■ Information You Might Need to Supply to Juniper Networks Technical Assistance Center on page 170

■ Return Procedure for the SRX210 Services Gateway on page 167

■ Contacting Customer Support on page 170

Part 5

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